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ABSTRACT

This report was designed to measure the effort expended during 1971 toward implementing programs to meet the needs of citizens of Iowa and to supply the State Board of Public Instruction with data, information, and advice to improve career education efforts in the state. Data were obtained primarily from statistics available by the State Department of Public Instruction and the State Auditor's Office, from site visit observations conducted over a 2-year period, and from questionnaire responses by local and area school administrators, instructors, and students. Based on the findings, a number of conclusions were reached, some of which are: (1) Secondary school students seem to have a greater interest in pursuing post-secondary vocational and technical programs in area schools than previously, (2) Future program planning in the vocational and technical area would be enhanced by annual labor market needs surveys, (3) Area community colleges do not have the proper financial commitment to provide strong vocational and technical programs, (4) An imbalance of training effort exists in the seven occupational clusters, (5) Most of the area schools provide academic instruction related to the world of work, and (6) Population trends and the state general aid formula may cause vocational programs to have to be extended to disproportionate lengths. (Author/SN)

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1972 REPORT ON THE VOCATIONAL EDUCATION EFFORT IN IOWA

Prepared by

STATE OF IOWA
CAREER EDUCATION
ADVISORY COUNCIL

OCTOBER 1972

VT 020051

Iowa
a place to grow

Career Education Advisory Council
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October 3, 1972

Mrs. Virgil E. Shepard, President
Iowa Board of Public Instruction

Dr. Sidney P. Marland, Commissioner
United States Office of Education

Mr. Lawrence Davenport, Chairman
National Advisory Council on Vocational Education

Madam and Gentlemen:

The attached report is intended to fulfill the legal requirements given to this Council to conduct an annual evaluation of the vocational education effort within the State of Iowa. The Council expanded its responsibility, by including in this assessment, efforts directed toward the career education concept at the elementary and junior high school grades, in addition to the review of efforts at the secondary and post-secondary level.

This report was a staff effort directly supervised by the Council. Each phase of the report was reviewed by the Council Members and, in numerous locations, knowledge gained by Council field visits are reported.

Sincerely,

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CHAPTER I

INTRODUCTION & DEFINITIONS OF TERMS

INTRODUCTION

This report was designed to meet the requirements of Public Law 90-576 in terms of measuring the extent of effort expended during the past year (using the State Plan for Career Education as a bench mark) toward implementing programs to meet the needs of the citizens of Iowa. The report is also designed to satisfy the desires of the State Board of Public Instruction for data, information, and advice to be considered in developing policies to foster improvement of the career education effort in Iowa. A summary of the major points for which Council thought was requested is contained in the December 14, 1971 letter from Mrs. Virgil Shepard, State Board President. These points are as follows:

1. What are the recommendations of the Advisory Council regarding the role and responsibilities of the different educational agencies involved in career education?

2. What are the recommendations of the Advisory Council regarding financing career education?

3. What are the strengths and weaknesses of career education offerings in the elementary-secondary schools of the State?

It is also the hope of the Council that the State Legislature will be able to use the contents of this report as an assist in its law making efforts. A few items in this report reflect on problem areas that emanate from congressional action. Hopefully, the Council's efforts at bringing these to light will be of assistance at that level.

The report was developed through the use of statistical information made available by the Iowa Department of Public Instruction, The State Auditor's Office, from observations made by field visits of the Advisory Council during the past two years, from questionnaire responses by local and area school administrators, and instructors, and from numerous other data sources which are listed in the bibliography. The Council wishes to recognize and commend the local and area school educators for the high level of professionalism which they displayed through the rapid return of the questionnaires. The questionnaires mailed were sent to a sample of the total population and mailed by groups, according to the speciality background of the individual, i.e., school administrators, office education instructors, vocational agriculture instructors, and the like. The percentage of response was considered to be exceedingly high on the first mailing which allowed the Council to conserve some of its limited funds by not requiring a second and third mailing to obtain a sufficient response for tabulation. We appreciate these attitudes which were demonstrated by the Iowa Educators.

The Council also recognizes the assistance of the various staff members of the Department of Public Instruction in forwarding needed data to the Council and interpreting and clarifying information in which there appeared to be discrepancies.

The methodology used for completion of this report included charting the major component parts of Public Law 90-576 and sub-dividing these components into elementary and secondary school effort, area school effort, and adult education effort. Because of the large number of

components of the Act and limited staff time, it was possible to only complete an assessment of state effort relating to the portions of the Act on secondary and post secondary programs, and selected exemplary programs and projects. A cursory review was made of the portions of the Act relating to disadvantaged and handicapped, guidance and counseling, research and training, cooperative programs, and consumer and homemaking education. No attention was given, in this report, to construction, contracting with private schools, ancillary services, work study, or the secondary and post secondary school effort in adult education.

Throughout the report, primary data sources are cited. In order to increase efficiency, a modified scientific footnoting method is used to identify the sources of the data cited. A typical footnote carries the appearance of (5-150). In this illustration, the 5 denotes the data source which is numbered in the bibliography and the number 150 cites the page number on which the data may be found. A footnote appearing like (25) identifies a single document (usually of limited length) found in the bibliography where no page number is necessary.

Public Law 90-576 specified that each state shall establish a vocational education advisory council. In the Fall of 1971, the Iowa Vocational Advisory Council decided to change its name to the Iowa Career Education Advisory Council. It was the belief of this Council that the change in name would not create any conflict in terms of discharging its responsibilities as outlined in Public Law 90-576. Current emphasis by the U. S. Office of Education on Career Education places importance on the Iowa Council's efforts to be concerned about the total career development

of the citizens of Iowa, rather than limiting its efforts only to the job skill development portion of career education which is normally referred to as vocational education.

DEFINITION OF TERMS

This report uses certain terminology for which a statement of definition may clarify the communications between the intent by the Council and the message received by the reader. Where the source of the definition is not identified by footnote, the definition has been approved for use in this report by the Iowa Career Education Advisory Council.

Administrative Decision

A decision defining the details with which board policy will be implemented.

Board Policy

A judgment, derived from some system of values and some assessment of situational factors, operating as a general plan for funding decisions regarding the means of attaining desired objectives. (1-403) (Some policies are also established by the Iowa Legislature and the Congress in their law-making activities.)

Career Education

K - 6 - Career education in grades K - 6 relate existing essential instruction in the basic skills to the varied ways by which adults earn a living and teaches respect for the value of all work.

Junior High School - Career education in the junior high school provides "hands-on" exploratory opportunities in major occupational "clusters" (broad groupings such as marine science, construction, fine arts, and

health, et. al.) of which each student should explore a minimum of three clusters which are of his greatest interest to determine the nature of careers in each cluster.

Senior High School - Career education in the senior high school should provide a broad range skill training in clusters of closely related occupations keyed to student interests, labor market needs, and recent migration patterns of the institution's graduates. The student should develop sufficient skill in a specific job cluster to qualify for employment or entrance into more advanced job preparation or further education for a profession. It may be desirable to provide a cooperative program for the student during his 12th grade to bridge the student's transition from school to work.

The Area Community Colleges and Area Vocational Schools can serve a unique function as part of the total career education effort. These schools should cooperate as a statewide system that provides specialized vocational and technical programs for those persons who have graduated or left high school who need highly developed skills in specific job categories to compete effectively in the labor market.

Functional Administrative Cost - The administrative cost in an area school which is directly attributable to one of the four specific program functional categories outlined in Section 286A.12 of the Iowa Code. To illustrate, the functional administrative cost attributable to the cost of all vocational programs of an area school would be the salary of the vocational director, his staff, supplies, travel, and the like. (48)

Program - A number of courses (or units of instruction) properly organized into learning units for the purpose of attaining specified educational

objectives; many include out-of-school activities sponsored by the school; (1-420)

or

A curriculum - which is organized and conducted in accordance with the provisions of the State Plan for Vocational Education approved by the U. S. Office of Education. (14-16)

Vocational Education - That portion of career education that is directed toward imparting to students the skills and specific related information necessary to prepare the individual for entry into employment.

CHAPTER II

AN OVERVIEW OF THE STATE PLAN AND FUNDING PATTERNS

THE STATE PLAN

Part II of the State Plan contains an analysis of data which is utilized for projecting the vocational education needs of the State for a period of five years. The data is presented in tabular and graphic form. The identified labor market need information was compiled from several primary sources. Some of the sources derive their conclusions on labor market need from statistical projections, while others project needs based on vacancy studies. A third process utilizes employer surveys to project future need.

Previous annual evaluations by this Council have recognized that, while the information used was the best available, the reliability of the data mix could be questioned. Valid data is necessary for effective planning. For this reason, this Council has recommended, in the past, the completion of a coordinated state-wide labor market survey of employers. At the time of this writing, the planning and design for a study of labor market need has been completed by the Department of Public Instruction. That agency has reported that they intend to conduct the labor market need survey in time to include the results in the Amendments of the 1973 State Plan. For this reason, the Council will not spend time developing an extended analysis of Part II of the State Plan for Fiscal Year 1972. Selected elements of Part II have been cited in the advice letter sent by

the Council to the State Board with regard to needed amendments for the Fiscal Year 1973 State Plan. This advice letter may be found in the Appendix.

Planning for Manpower Needs - The current effort by the Department of Public Instruction in identifying employers training needs is one of the components of the Career Education Need Information System. The employment need portion of the CENIS Project covers a sampling of all employers, state-wide. This Project also includes a sample of all employers located within the boundaries of each merged area district in the State. The study is to be funded with State research funds from Public Law 90-576.

According to Section 103(a)(1) of Public Law 90-576, the Commissioner of Education shall transfer funds to the Secretary of Labor, so that he may complete national, regional, state, and local studies and projections of manpower needs for the use of Federal, state, and local officials. Since the passage of Public Law 90-576, no funds have been received by the Iowa State Employment Security Commission to make studies and projections for career education planning. Further, it has been determined that the U. S. Office of Education has never transferred any funds from their office to the Secretary of Labor under Section 103(a)(1).

Presently, the National Advisory Council on Vocational Education is hosting meetings between the U. S. Office of Education and the Bureau of Labor Statistics to identify methods for effectively identifying labor market needs. These discussions, we understand, include details of implementing Section 103(a)(1) of Public Law 90-576.

In a report from the Governor's Conference on Comprehensive Manpower Planning, George Lundberg, Chairman of the Iowa Employment Security Commission reported "...that, despite volumes of statistics collected by government agencies and others, there were many important areas where we (sic: Employment Security) had little, if any reliable information." (32-14) He further reports that current work force data is not available for almost two-thirds of our Iowa Counties. (32-41)

Iowa State Employment Security Commission reports that the major problem in collecting adequate labor market information is the lack of qualified personnel and data processing capacity. (32-42)

The Council has had the opportunity to review the planning and design foundation for the labor market need portion of the CENIS Project. The Project will be funded with Part C funds from Public Law 90-576. It appears to the Council that the system being planned will yield information that can be used to facilitate effective state-wide and area-wide educational program planning. It also appears that this information will be of considerable value, since it will be based on employers' stated needs which will be sampled periodically. This expression by employers will reflect, more accurately, projected employment opportunities in more meaningful job classifications in Iowa than the 1972 statistical projections made by the Iowa State Employment Security Commission in their publication Occupational Requirements for Vocational Education FY 1972. Those projections are based on national trends for broad clusters of jobs.

Federal regulations prohibit the use of Part C research funds

on the same topic for more than one effort. It appears appropriate for the Administration and Board of Public Instruction to give attention to planning for funding and implementation of future labor market surveys like that proposed under the CENIS Project.

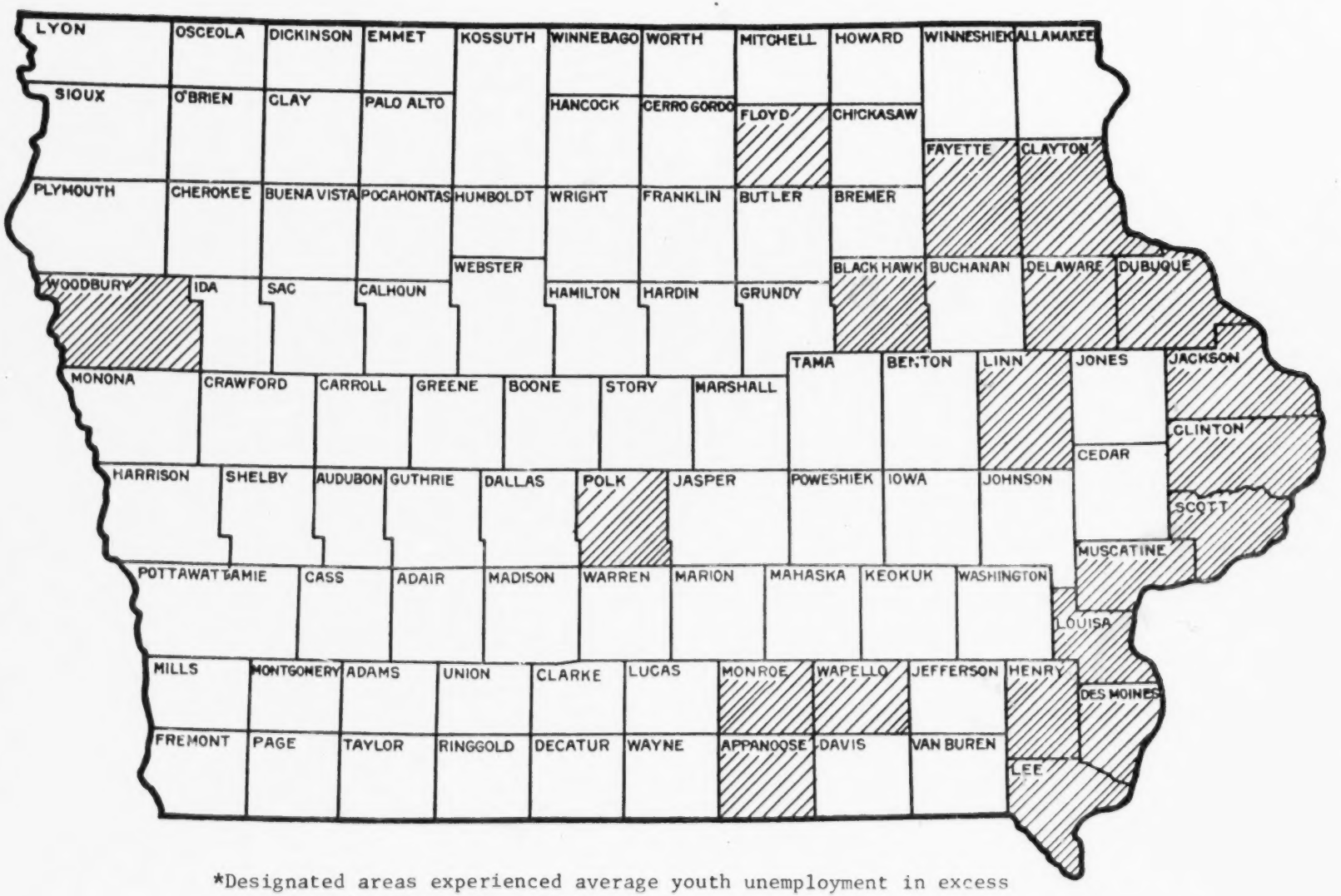
Should the U. S. Office of Education fund the U. S. Department of Labor to the full extent specified in the law ($5,000,000), and should the U. S. Department of Labor divert a proportionate share of these funds to the Iowa State Employment Security Commission, the allocation to Iowa would, most likely, be inadequate to effectively collect the necessary planning information as outlined by Mr. Lundberg in his speech. Funds should be sought from the State Legislature to support periodic labor market need surveys.

The State Plan is intended to be a blue print which details the work or accomplishments to be achieved in a given period of time. In order to develop such a plan, it is necessary to have reliable data about the labor market, student needs and interests, and past trends of student movement within and out of state. To be effective, a blue print or plan must have demiensional characteristics that tell how much, when, and where. These dimensions need to possess projection of possibilities for deviation.

Maps contained in Part II of the State Plan for career education delineate depressed areas, areas with high youth unemployment, areas of generally high unemployment and underemployment, and areas experiencing high rates of school dropouts. (See Maps 1 & 2). Other graphics identify areas of population density, schools with five or more vocational programs

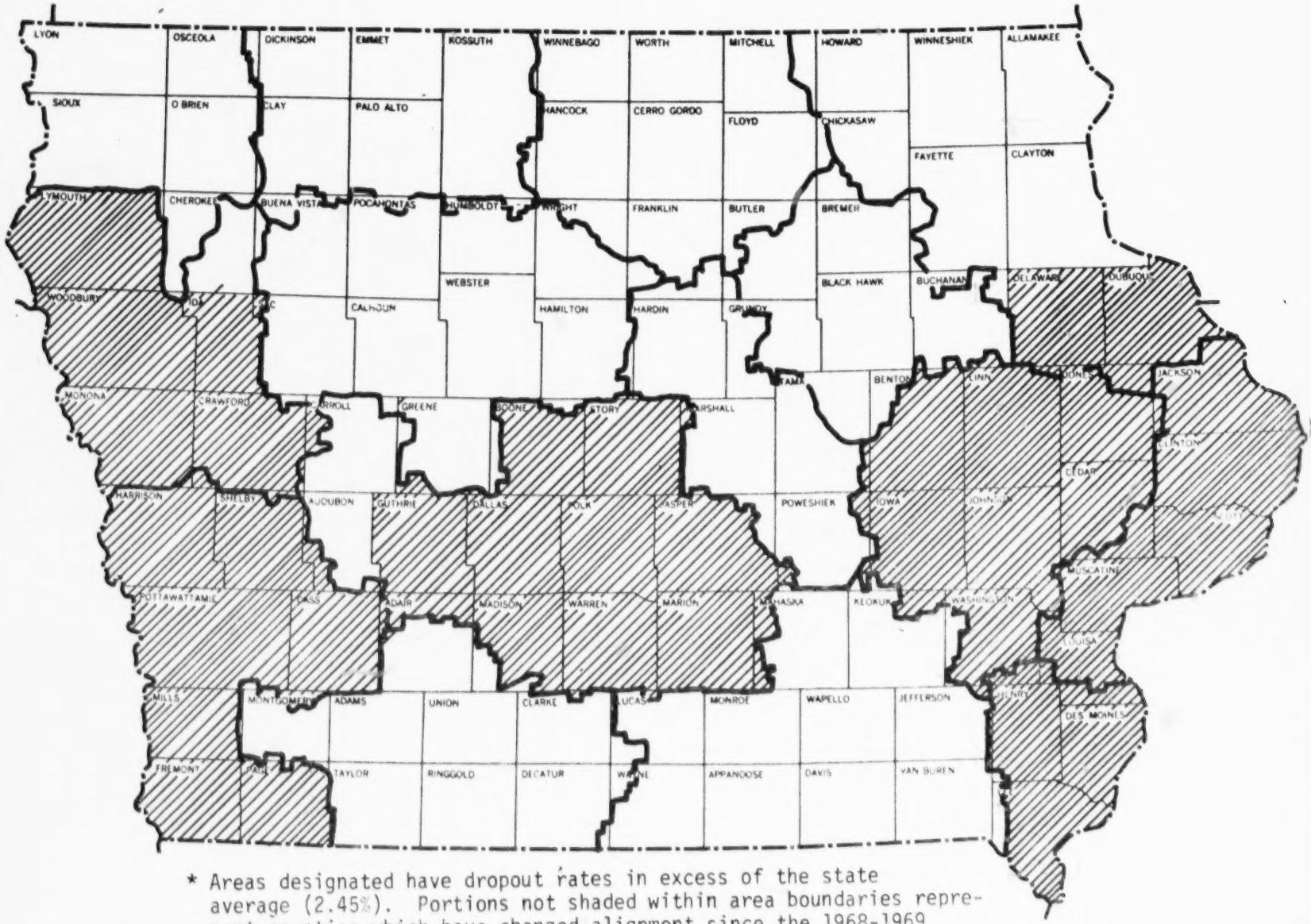
MAP 1

Specific areas with high rates of unemployed youth*



*Designated areas experienced average youth unemployment in excess of 12% during Fiscal Year 1970.

MAP 2. AREAS WITH HIGH RATES OF SCHOOL DROPOUTS*



* Areas designated have dropout rates in excess of the state average (2.45%). Portions not shaded within area boundaries represent counties which have changed alignment since the 1968-1969 dropout study was conducted.

and geographic areas served by each area school.

When reviewing the State Plan for Fiscal Year 1972, the Council finds that state-wide quantitative measures for performance are identified in the annual Plan. Neither the annual Plan nor the long-range Plan identify the school districts where the projected programs will be located to serve the greatest number of students with the greatest needs most efficiently. The Plan, also, does not specify whether the new or expanded programs will be located in the schools experiencing high rates of youth dropout or high youth unemployment. The current and preceding State Plans did not state the goals to be attained in dimensional or measurable terms.

The U. S. Office of Education has developed new guidelines for the State to follow in developing the State Plan for Fiscal Year 1973. These guidelines encourage the writing of the State Plan in terms of measurable objectives.

The U. S. Office of Education guidelines specify that the goals need to be stated in terms of level of education (e.g., elementary, secondary and the like) in addition to target populations such as general, disadvantaged, handicapped, and the like.

One inhibiting factor to effective state planning is the uncertainty of federal funding. For this reason, it appears appropriate that priorities should be placed on program implementation, so that schools and students with greatest needs are given high priority and others are given lower priority.

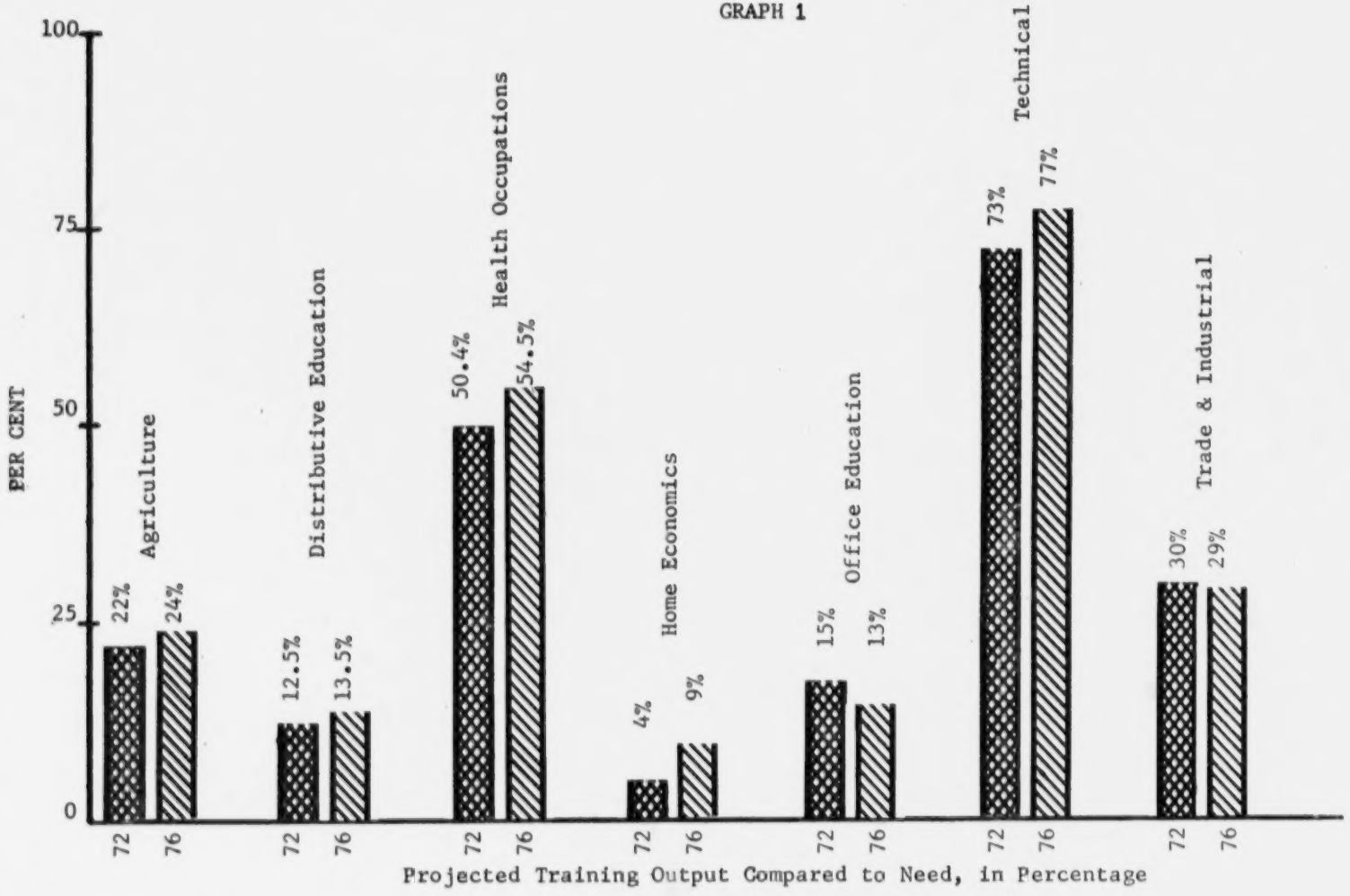
Educational Program Implementation - The major program categories were analyzed in Table I of Part II of the State Plan to identify

a comparison between stated employment opportunities and projected output from secondary and post secondary schools. The reader should refer to Graph 1 and note that two occupational areas lead all others in terms of reaching the employment needs within the State. These are technical education at seventy-three per cent and health occupations at fifty per cent. When comparing Iowa's projected performance with Graph 2, it should be observed that the greatest employment expansion should be occurring in the fields of professional and technical, service workers, clerical workers, and sales workers. While national trends apparently are used for planning in the State, categories such as professional and technical workers generally denote competence level required for performance on-the-job and is of questionable value for educational planning, since there are technical workers found in office, distributive, industrial and agriculture occupations, in addition to many other broad categories.

Selected contents of the "Annual Report for Iowa" (20) were analyzed and charted in Graph 3. This document generally supports the national trends reflected in Graph 2. One exception occurs, in that the Iowa projection lumps together demand for clerical and sales workers. This information is of limited value for educational planning, since there are significant differences in skills necessary to work in clerical occupations when compared to those required in sales occupations.

The report, Manpower Needs in Iowa by Occupation, 1971-75, shows a vast refinement in defining specific occupations for training needs. (23)

GRAPH 1



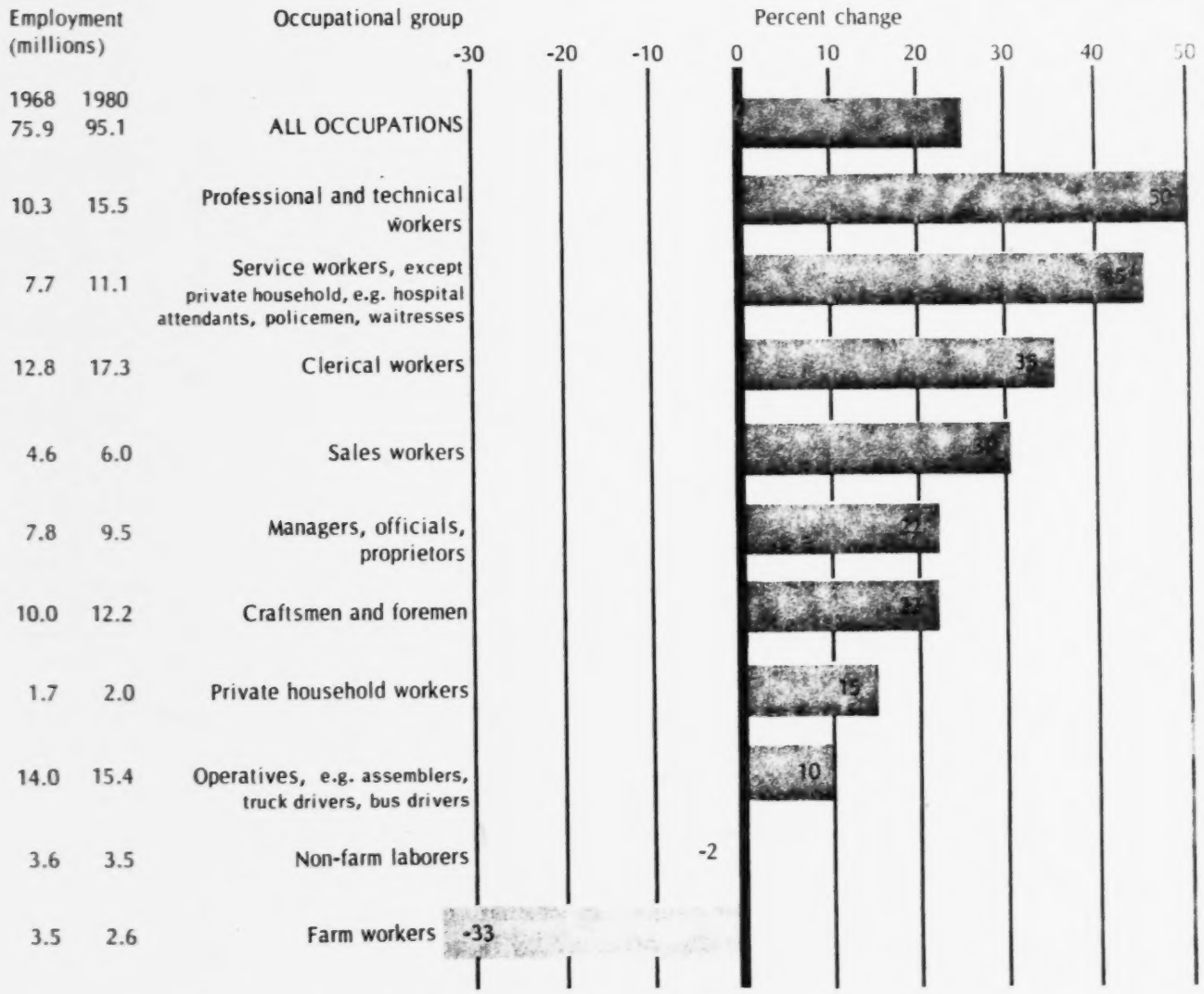
Projected Training Output Compared to Need, in Percentage

(Including Expansion and Replacement)

Developed From Table 1 page II - 3 1972 State Plan for Career Education.

Graph by Iowa Career Education Advisory Council

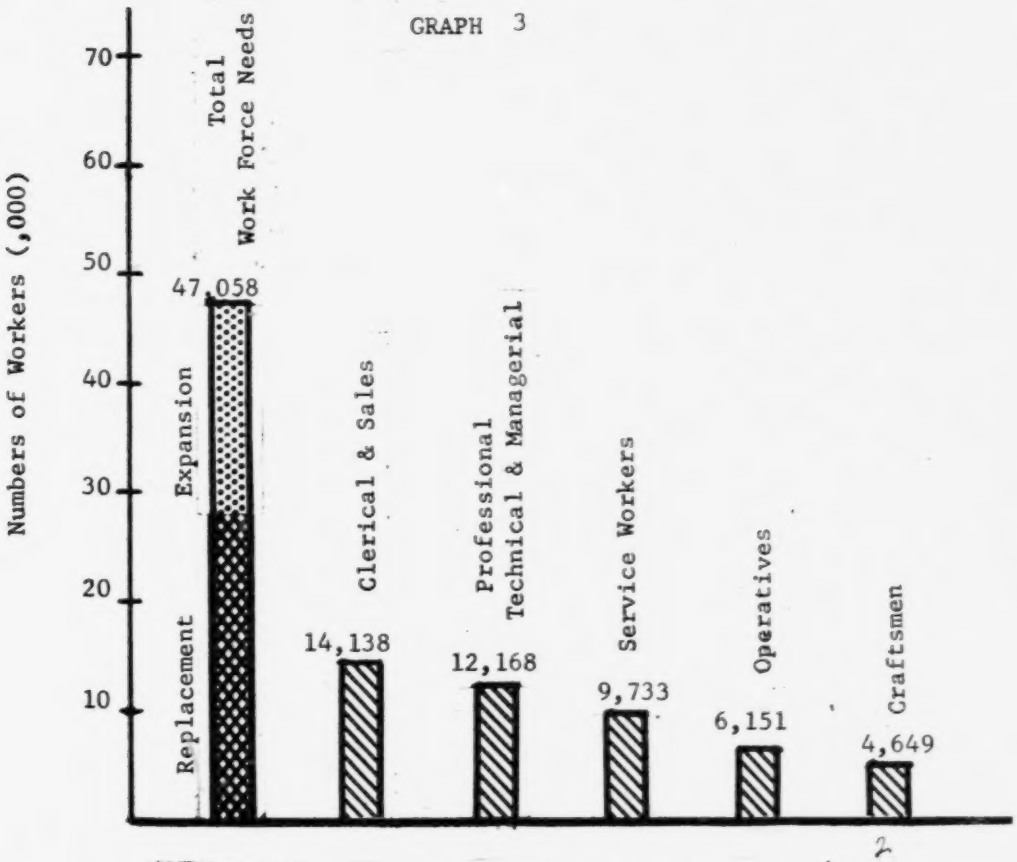
Professional, technical and service occupational groups will grow fastest



GRAPH 2

From: U. S. Manpower in the 1970's
U. S. Department of Labor, 1970
U. S. G.P.O., Washington, D.C.

GRAPH 3



Projected Employment Opportunities During FY 1972
(From: Occupational Requirements for Vocational Education - FY 1973 - Iowa Employment Security Commission, Des Moines, p.7.)

Graph by Iowa Career Education Advisory Council

The results from the CENIS Project will more adequately identify programming trends that should take place in the State. It should be possible to summarize these occupations into the fifteen occupational clusters identified by the U. S. Office of Education. The fifteen occupational clusters include:

Agri-business and Natural Resources	Marketing and Distribution
Business & Office	Marine Science
Health	Personal Services
Public Service	Construction
Environment	Transportation
Communication and Media	Consumer and Home-making Education
Hospitality and Recreation	Fine Arts and Humanities
Manufacturing	

(8-2)

Each cluster could then be further identified by categories based on competency level. These would include unskilled, semi-skilled, skilled, technical, and professional. It is recognized that institutions of higher education have been preparing persons for employment in the professions for many years. Junior and community colleges and area vocational-technical schools have been preparing persons for employment in technical occupations for at least twelve years. With respect to the 1972 State Plan's projected increase in needs for professional and technical persons, the question should be raised considering the viable labor market; does this trend identify whether employers will prefer to intensify "in company" promotions of skilled personnel to technical classifications, or will employers

hire graduates from technical programs for technical vacancies in their organization? Also, do the national trends for professional and technical workers apply to Iowa?

Attention should be called to the reported level of program implementation outlined in Table 1, Part II, page 3, of the 1972 State Plan for Career Education. The contents of this table are summarized in Graph 1. This table illustrates an unbalanced implementation of programs in the various fields, when compared to available labor market information. Questions could be raised as to why educational institutions in Iowa are planning to satisfy seventy-seven per cent and fifty-four per cent of the need for technical and health workers respectively in 1976, while only thirteen per cent of the need for workers in distribution and sales will be met in that year and the percentage of training output for office workers compared to the need will be reduced from fifteen to thirteen per cent. The latter two occupational clusters are providing some of the more expanding employment opportunities in the State, according to current projections. There appears to be a need for the State Board to develop policies calling for coordinated future implementation of programs.

Developing State Plan Contents - The level of federal funding is always an unknown factor which inhibits effective state-wide planning. It seems appropriate for the State Plan to be written in plateaus. Should the State receive the same funding as the previous year, one should expect plateau one of the Plan to be implemented. Should the State receive a percentage increase in funds over the previous year, plateau two programming should be implemented.

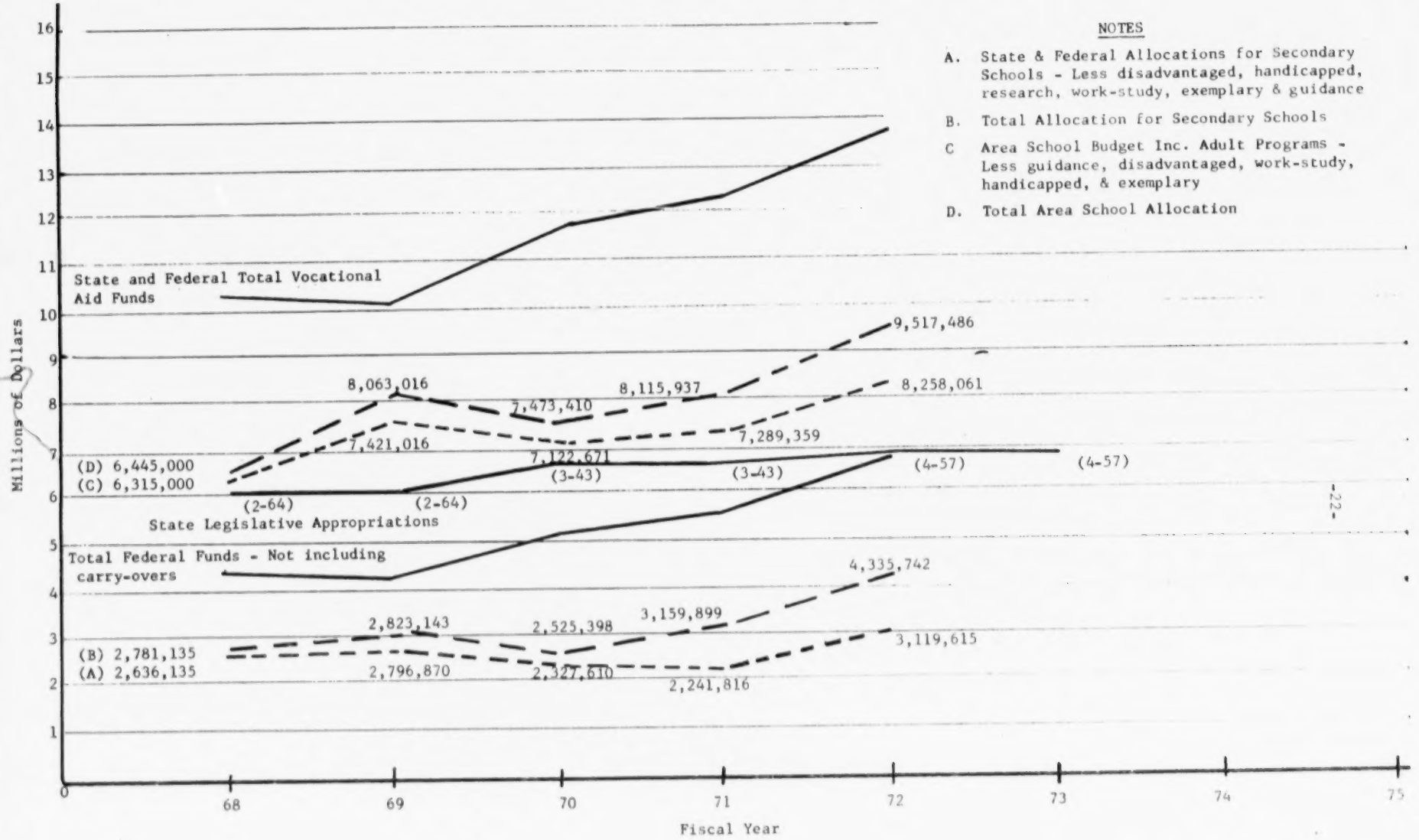
Continuing Labor Market Survey - There appears to be a need for an annual collection of labor market information to provide current basis for effective vocational educational planning. The CENIS Project components, after the system is perfected, should be assigned to those agencies that are best equipped to complete the tasks. The State Manpower Planning Council should coordinate this CENIS effort on an annual basis.

The State Legislature should appropriate sufficient funds in the 1973 Session to defray the cost of the annual labor market survey. Possibly, state matching funds for MDTA programs could be diverted to the labor market survey portion of CENIS. It is possible that future rapid shifts in the labor market may occur, as has recently happened in the aero-space and electronics industries, where large numbers of workers from these industries are experiencing unemployment. For this reason, it appears appropriate that future program planning should be aimed at balancing the state-wide offering with the fifteen occupational clusters, identified by the U. S. Office of Education, so that drastic shifts in training programs offered by schools will not be necessary.

FUNDING PATTERNS

Graph 4 shows the total state and federal funds allocated as categorical aid to be used to assist in defraying the exceptional cost of vocational-technical and other categories of career education, such as disadvantaged and handicapped programs, research, teacher education, home economics and exemplary projects. The Graph does not include allocations made for financing the cost of state administrative expenses. The solid lines represent the allocations of state and federal funds, and total state and federal funds available for local and area school program support. It should be noted that increases in state funding have not been made in proportion to the increase in federal funding. The increase in federal funding,during the last three fiscal years, brings that appropriation to a level almost equal to the amount appropriated by the State Legislature for fiscal year 1972.

Prior to fiscal year 1968 and through fiscal year 1971, the State Legislature made a single appropriation for vocational education aid and left the responsibility for allocation of those state funds to the discretion of the State Board of Public Instruction. During the 64th General Assembly, the Legislature passed separate appropriations for secondary schools and area schools for vocational education support. The secondary schools were allocated $1,725,000.00 for each year of the biennium, while the area schools were allocated $5,175,000.00 for each year of the biennium. (4-5) The State Board is still left with the discretion of allocating the federal aid funds, between secondary and post



GRAPH 4

VOCATIONAL EDUCATION FUNDING AND BUDGET ALLOCATION PATTERNS FOR PROGRAM REIMBURSEMENT OF LOCAL AND AREA SCHOOLS IN THE STATE OF IOWA

Source: Department of Public Instruction Proposed Budgets and Office Education Fiscal Year 1972 Budget

secondary schools, for vocational education.

The funding of area school programs from vocational aid funds has been greater than secondary schools for the five year period from fiscal year 1968 through fiscal year 1972. Line C on the Graph represents the funds available for programs designed for the general population, while line D represents the total amount of vocational aid funds available for area schools, including specially earmarked federal funds directed for use with special needs population and for the development of exemplary projects, and for guidance. The difference between lines C and D represents the amount of special purpose funds delivered to area schools. Except for fiscal year 1970, the average amount of vocational aid funds has been increasing over the five year period.

The funding of elementary-secondary school programs from vocational aid funds has been less than that allocated to area schools during the five fiscal years. Line A on Graph 4 represents the amount of funds available for programs designed for the general population, while line B represents the total amount of funds available for secondary schools, including special purpose federal funds. During the fiscal years 1968 through 1971, there was a trend toward reducing the amount of funds available for programs for the general population, while in fiscal year 1972 there was a significant increase (nearly a million dollars), or almost thirty per cent. The amount of special purpose funds for secondary schools held at approximately $100,000 for fiscal years 1968 through 1969, increased to approximately $200,000 in fiscal year 1970 and moved to nearly $.,000,000 in fiscal year 1971 and over $1,000,000 in fiscal year 1972.

Graph 4 was designed to present an overview of appropriations and allocation patterns over a five year period. Conclusions should not be drawn from this Graph without making a cautious and critical review of two other portions of this report entitled Funding of Secondary Programs (Chapter 4) and Financial Analysis, (Chapter 5).

SUMMARY AND CONCLUSIONS

- Labor market needs projections, based on a survey of employers, should yield more valid program planning information than has been evidenced in the 1972 and earlier State Plans for Career Education.

- On-going funding for the continuation of the labor market needs portion of the Career Education Need Information System under current regulations pertaining to Public Law 90-576 is not possible.

- The 1972 State Plan for Career Education does not delineate the kinds of programs that are best suited to satisfy the most critical labor market needs nor what school districts should establish these programs in order to meet the most critical needs of the students.

- New program implementation or existing program expansion is dependent upon the federal and state dollars available for these activities.

- Current program implementation shows little balance in terms of overall projected employment opportunities.

- The term "technical and professional workers" as used to define employment opportunities lacks value, since there are professional and technical workers in most occupational clusters.

- Federal funding of vocational aid has been increasing in recent years to the point where it is almost equal to state appropriations, while state funding increases for vocational programs have been comparatively insignificant.
- A new precedent was established by the State Legislature in 1971 when they earmarked, for the first time, funds for secondary and post secondary vocational programs instead of making one appropriation for both levels.

RECOMMENDATIONS

The Council recommends that:

1. State funding be sought for continuation of the labor market needs survey protion of the CENIS Project and that, since this kind of data would be useful to many organizations within the State, the Project should be coordinated by the State Cooperative Area Manpower Planning Council.

2. The U. S. Office of Education taxonomy coding system should be revised to reflect the fifteen occupational clusters that have been identified by the U. S. Office of Education, and the State Plan format should be revised to reflect the reporting of employment needs, according to the fifteen occupational clusters.

3. Priority be given to devoting additional effort to encourage secondary school systems that have high drop-out rates and whose graduates are experiencing high rates of unemployment, to implement vocational programs keyed to labor market needs.

4. Future State Plans be prepared identifying priorities for new programs and program expansions, based on differing plateaus of potential funding.

5. When planning for new program starts, priority be given to balancing the offering,keyed to labor market needs, among the seven or fifteen occupational categories, under which current State Plan is developed.

CHAPTER III

CAREER EDUCATION EFFORT IN ELEMENTARY & JUNIOR HIGH GRADES

ELEMENTARY EFFORT

The Council recognizes that career orientation activities most likely exist as discrete units in the elementary schools throughout the State. Inferences made by educators during Council field visits lead the Council to believe that career orientation is not generally part of basic skills instruction. For this reason, an accurate assessment of the situation is not possible. Career orientation at the elementary level is a necessity for individuals, as evidenced in the study by Thomas Wolff and Associates, entitled "A Profile of Iowa College and High School Students". That report states:

> "Today's Iowa college student is not at all sure of his career plans. About half either have an open mind about changing or say they possibly will change. Only 44% say they are determined to stick with their present career choice through their education period.
>
> This determination obviously grows as the student advances through class levels. While 40% of the freshmen say they are determined to stick with their career choice, 48% of the juniors are determined. However, even with the juniors, 47% say that while they're fairly sure of their choice, they may find a career that is better for them.
>
> Students at area schools are slightly more determined to stick with their career choices that the private college or state university students...
>
> Students who are anticipating further changes in their careers were asked what fields they intend to go into. About 18% of the total group answered this question." (25-28)

It appears that all students are in need of information about labor market opportunities and their own talents, in order to make valid decisions about their future work.

Part II of the State Plan projected 2,665 students in grades kindergarten through eight would be enrolled in new career orientation programs during giscal year 1972 and that this trend would continue with a projected enrollment of 4,025 students for fiscal year 1976. This is an increase of 1,360 students in this program for the five year period. The Data on Iowa Schools, Part I, for fiscal year 1970-71, shows that 456,366 students are enrolled in grades kindergarten through eight. The career orientation effort outlined in Part II of the State Plan represents approximately six tenths of one per cent of the total enrollment during the next five years.

Current Effort - During fiscal year 1972, three projects aimed at career orientation were funded from the Iowa allocation for exemplary projects under Public Law 90-576. In addition, Pottawattamie County Board of Education is responsible for conducting a career education project which is funded by the U. S. Office of Education and Polk County Board of Education is conducting a career education project under Title III of the Elementary-Secondary Education Act.

Exemplary Projects - The Iowa State University Project in pre-career education is a two-phase project. The first phase involved elementary teachers from nine local school districts teaching in grades one through eight. The second phase includes secondary school involvement in pre-career reorientation of instruction. Six of the nine

original school systems are involved in this latter effort. The total plan includes compilation and reproduction of instructional materials developed by the pilot schools for distribution to any other school in the State desiring to implement career education. One of the unique elements of this project places heavy emphasis on the need for the student to be able to assess his own talents and abilities. Based on his assessment and the knowledge he has gained about jobs in the labor market, the individual should be able to make a more valid career choice. During grade eight, the students participating in this project will enroll in several six to twelve week mini pre-vocational courses. During the ninth grade, the students will select a one year pre-vocational course. During grades ten, eleven and twelve, the student will be enrolled in multi-occupational preparatory vocational courses. If the student is ready in the twelfth grade, he will be enrolled in specialized occupational training, utilizing school shops or laboratories, coope ative (on-the-job) training, or advanced placement in a post-secondary school. (37)

The Monticello Community School District developed a three-phase project. The initial phase involved the development of a course in career opportunities for seventh and eighth grade students. The reason for selecting these two grades was to reduce the number of students who were dropping out of that school in grades seven through nine. The second phase of the project will attempt to integrate the subject of careers into all phases of elementary instruction. Phase three will involve expanding opportunities for career experience in grades nine through twelve.

All three phases of the project were in some degree of development during fiscal year 1972. (42)

The Mason City Community School District developed a career education project which placed major emphasis on re-directing instructor's thinking and attitudes about instructional content, purpose for education, and methodology of instructional techniques. The first thrust in this effort was aimed at instructing teachers, through field trips and the like, about various opportunities in the world of work. The teachers must know about the world of work before they can include viable instructional units on the topic. The second phase is for the teachers to exchange information about their varied experiences. Teachers in grades kindergarten through twelve are included in the project. The teachers then revise their instructional content to focus on the applied and occupational aspects of academic instruction. A specific course has been developed for the senior high school students which focuses on bringing the student to self awareness and causes him to compare his own abilities and talents with those required in the work environment. (45)

U. S. Office of Education Funded Project - The Pottawattamie County School System was recipient of a grant to be jointly administered by that school and Iowa Western Community College to provide career oriented instruction for several local school systems in the Southwestern part of Iowa. The project, according to the proposal, will include the following key elements:

1. Career information
2. Testing services
3. Vocational counseling and guidance
4. Exploratory work experiences
5. Intensive job skill training
6. Group guidance to develop personal attitudes
7. In-service training for teachers and resource persons
8. Parent communications

Students from grades kindergarten through twelve were included in the project. Students involved in the project are utilizing existing laboratories and shops of the Council Bluffs local school system and Iowa Western Community College. The shops and labs in the former institution were not normally used during the summer. (38)

E.S.E.A. Funded Project - The Polk County Board of Education received a grant from the Iowa Department of Public Instruction under the provisions of Title III of the Elementary-Secondary Education Act. The initial effort was directed toward providing low achieving students, in the elementary grades, with a summer experience in career orientation. Over the three year period, students in all twelve grades will be included in the effort. Currently, the Ankeny School System is the only one participating in the project. If this first effort is successful, the project will be expanded to other systems in the County. Resource materials from the Iowa State University Project were to be used in this project. Following the summer workshop, the project staff will work to implement the career education concept throughout the entire Ankeny School System during the normal school year. (39)

Currently, none of the exemplary career education project proposals identify any effort toward infusing the results of the projects

into the ongoing teacher preparation programs at the three state universities and the private colleges and universities in the State. Upon completion of the exemplary projects, the Council recommends that a directed effort be organized toward infusing career education in all preparatory teacher education programs in the State.

All but one of the exemplary projects contain provisions for disseminating the results of the projects to other local school systems in the State. As these projects are implemented in other than the pilot schools, additional innovative ideas will be generated by individual teachers. The Council recommends that a state clearinghouse be established to catalogue these ideas, techniques, and materials and that each of the regional educational media centers become involved in stocking and disseminating this information.

None of the exemplary projects have involved the Iowa Education Broadcasting Network in their efforts. On August 10, 1972, John A. Montgomery, Executive Director of the Educational Radio and T. V. Facility Board, stated that his organization would be interested in cooperating with sponsors of the exemplary projects. (46) The Council recommends early involvement of I.E.B.N. in selected exemplary projects, so that instructional content on those stations can be focused toward career orientation.

JUNIOR HIGH SCHOOL EFFORT

All of the exemplary projects reviewed in the elementary school portion of this chapter provided for the infusion of pre-career education in the academic subjects taught in the junior and senior high school

curriculum.

As far back as the middle to late 1930's, educational leaders have identified the need to provide students enrolled in the junior high school grades (seven through nine) with a broad range of exploratory experiences to assist them in reaching realistic decisions concerning his future career and educational choices. Through the provision of a broad exploratory program, the students should then be able to select an educational program that would equip them for a career and be prepared to be a contributing member of society. The instructional programs in the junior high schools grades in Iowa Schools, apparently, have not been effectively meeting this goal, as reported in "A Profile of Iowa College and High School Students". This study reports that:

> "Teachers exert a significant influence in inspiring the student on a particular course of study, as well as serving as examples for emulation." (25-75)

Those completing the questionnaire for this study were provided the opportunity to respond to the item, "I like and do well in studies relating to these fields". The response to this item was not reported and it is, therefore, assumed to be insignificant. It further appears that broad exploratory opportunities are not provided to students in the intermediate grades, because of the disproportionately high number of students that desire to seek employment in the education-social services, when compared to total national labor market needs and trends.

The State Plan divides the Secondary Program level into two areas: grades eight and below, and grades nine through twelve. This type of organizational division represents 145 school districts or 14.21%

of the total junior high school grade enrollment in the state. Eighty-five school districts provide a junior high school (grades seven through nine). During the 1970-71 school year, 149,380 students were enrolled in grades seven through nine. Of this number, 80,398 students or approximately 53% were attending a school system that provided an independently structured curriculum for those in the junior high school grades. The remaining 222 school districts have ten different organizational structures with a total enrollment in grades seven through nine of 47,267 or 32%. It appears to be desirable to reorganize the State Plan format to reflect the school structure servicing the greatest number of students in the State.

The Data on Iowa Schools, Part III (Educational Programs), shows in Table 14, pages 27 through 37, the number of students enrolled in practical arts courses in grades nine through twelve for the school year 1970-71. The table does not indicate the number of pupils enrolled in these courses on an individual grade basis or whether the courses are exploratory or specialized. It also does not identify the Subject Areas and the number of pupils in exploratory programs in grades seven through eight.

Planning for the broadening of career exploration opportunities in all junior high school grades is necessary. Without a refined data collection system, it would be most unlikely that the status of exploratory opportunities could be identified. It is also unlikely that planning for future needs could be improved without a refined data reporting system.

SUMMARY AND CONCLUSIONS

- Current planning projects that a small portion of Iowa's total elementary school population will be involved in career orientation by fiscal year 1976.

- Five exemplary projects involving more than thirteen elementary-secondary school districts in the State are reorienting teachers and instructional content to the career education concept.

- None of the exemplary projects outline provisions for infusing the results from the projects into ongoing teacher preparation programs.

- There does not appear to be provisions for establishing a state-wide clearinghouse and dissemination centers for ideas, materials and techniques generated by the exemplary projects.

- Currently, the Iowa Educational Broadcasting Network is not involved in any of the exemplary projects.

- A report by Thomas Wolff and Associates infers that, generally, junior high school grade students are not being provided a high-quality, broad-range exploratory type of program.

- Current methods of reporting data on exploratory instructional activities in the junior high school grades will inhibit future measurement of progress toward improving exploratory instruction in schools.

RECOMMENDATIONS

The Council recommends that:

1. Early effort be expended toward developing and implementing a plan to infuse the findings and results from the exemplary projects into ongoing preparatory teacher education programs.

2. A state clearinghouse be established to catalogue and desseminate ideas, techniques, and materials resulting from local and state-wide career education efforts to the regional educational media centers.

3. The Iowa Education Broadcasting Network be involved, at an early date, in the exemplary projects, so that resources of that service agency can be utilized to enhance career orientation instruction.

4. State Plan format be modified to reflect the elementary-secondary school structure under which the majority of the students in the State receive their instruction.

5. The data reporting on the efforts of elementary-secondary schools in the State be refined, so that the status of exploratory opportunities for junior high school grade students can be identified.

6. Legislation be passed requiring that career orientation and exploration be implemented in all elementary and junior high school grades in Iowa.

CHAPTER IV

SECONDARY CAREER EDUCATION EFFORT

State Plan Analysis

Secondary programs are funded under three parts of the State Plan; Part B - Secondary Programs, Part F - Consumer and Homemaking Education, and Part G - Cooperative Programs. The State Plan projects a total enrollment of 47,850 secondary students in FY '72. Student enrollment accounted for under Part B funding should reach 17,971. This estimate includes 2,040 disadvantaged and 914 handicapped students. Five hundred of the above number of students should also be receiving assistance under the work study, Part H, portion of the Act.

There should be 28,222 students enrolled under Part F, Consumer and Homemaking Education, of the Act. This program generally develops understanding and competencies in home-family management and relationships, rather than emphasizing preparation for the world of work.

It is anticipated that 1,657 new students would be enrolled under Part G, Cooperative Programs.

It appears that expansion priorities for secondary career education programs are directed toward:

A. Target Population of disadvantaged persons; drop-outs, minority groups, and handicapped.

B. Target Areas of economically depressed and areas with high unemployment and youth unemployment. The areas of high drop-out rates and high youth unemployment correlate closely with areas of greatest population density.

Tables 2 and 3 in Part III of the State Plan project the expansion and establishment of new instructional programs for secondary career education. All of the programs are listed in these tables. However, only those programs relating to Part B of the Act will be discussed in this part of the report. The programs funded by Part F are discussed in another corresponding portion of the evaluation. Efforts relating to Part G of P.L. 90-576 will be reviewed in depth in the FY 1973 Annual Evaluation.

SECONDARY EXPANDED INSTRUCTIONAL PROGRAMS

	(G)	(B)	(C)	(D)	(H)
Agriculture	33 29	2			
Distributive Ed.			2		
Home Economics		11(F)		1	
Industrial Arts				2	
Office Education			5		
Trade & Industrial				10	7
Guidance				5	1

SECONDARY NEW INSTRUCTIONAL PROGRAMS

	(B)	(G)	(D)	
Agriculture	13	10		
Distributive Ed.		2		
Home Economics	27(F)			
Office Education		2		
Trade & Industrial		1	3	
Guidance			3	

B = Institutional-type Programs

G = Part G of P.L. 90-576 - Cooperative Programs

C = Part C of P.L. 90-576 - Research and Training

D = Part D of P.L. 90-576 - Exemplary Programs & Projects

H = Part H of P.L. 90-576 - Work Study

The expansion of 34 programs are planned for FY '72 under Part B. This expansion will include two programs in agriculture, two co-op programs in distributive education, two programs for the disadvantaged in industrial arts, five coop programs in office education, seventeen programs in trade and industrial for the disadvantaged and handicapped and six programs for career counseling and guidance for the disadvantaged and handicapped. The greatest planned expansion of vocational offerings at the secondary level is projected to occur in programs for the disadvantaged and handicapped and cooperative programs.

A total of nineteen new programs are planned under Part B. This number included thirteen in agriculture, three trade and industrial programs for the disadvantaged, and three guidance programs for the handicapped.

SECONDARY SCHOOL STATE WIDE EFFORT

School Offerings

This report is limited to reviewing the programs which are approved by the State Board of Public Instruction for operation under the guidelines pertaining to P.L. 90-576 and the State Plan for Career Education and may or may not be reimbursed by the Department of Public Instruction.

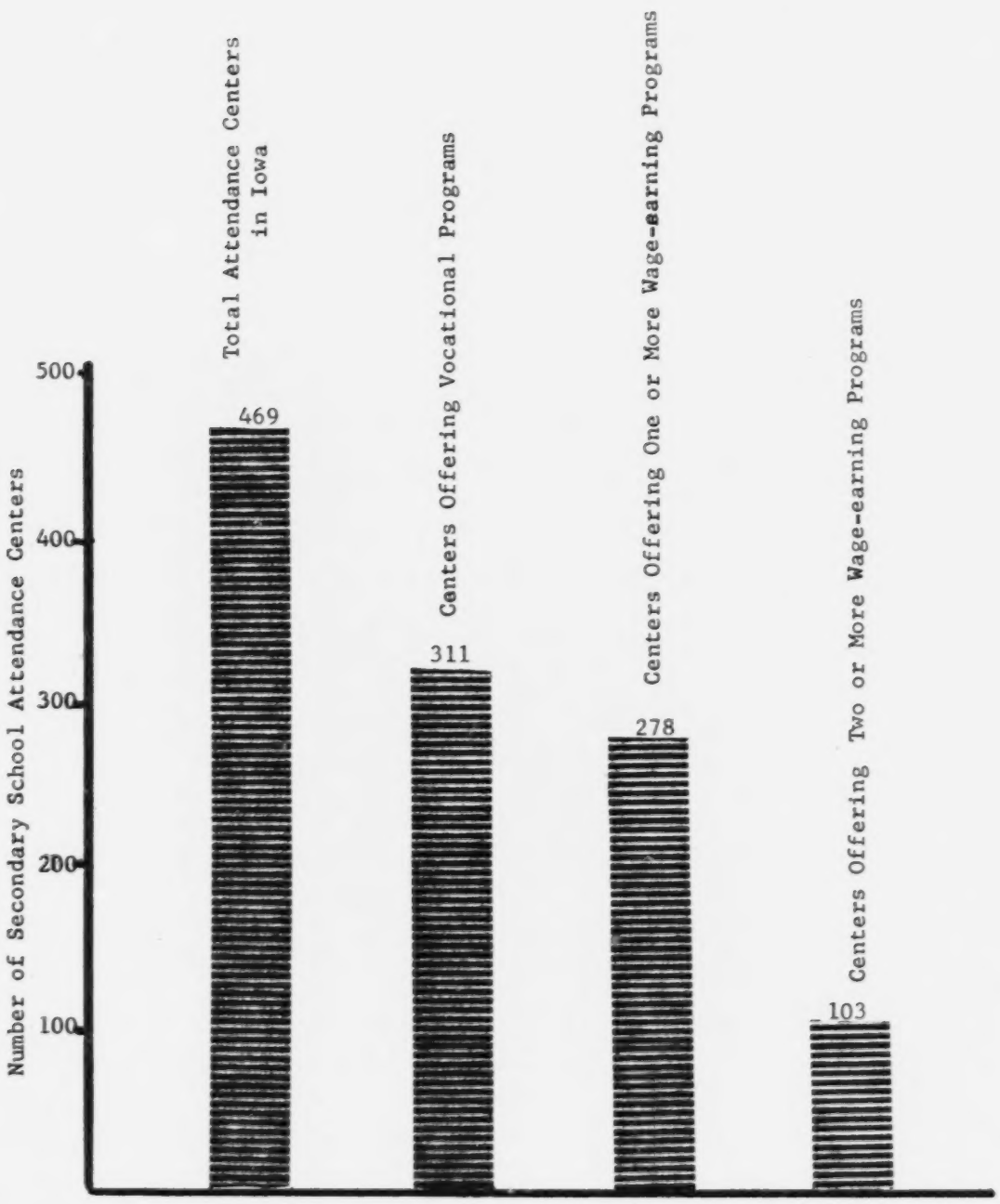
It is recognized that local schools may be operating occupational preparation programs that meet the standards of the Law and the State Plan cited above for which recognition by the State Board has not been sought. Data for these programs are not readily available for consideration and limited Council staff time prohibits the detailed analysis

of voluminous computer print-outs. Other non recognized "practical arts" programs, undoubtedly, are operated by local schools which to not provide salable skills for the students or are not keyed to current labor-market employment opportunities. These programs are not included in this analysis of effort.

Reimbursed career education programs were offered in 311 of the 452 school districts within the State, during the 1971-72 school year. Two hundred and twenty-six of these schools offered vocational agriculture programs. Two hundred and fourteen offered home economics programs and forty-nine offered distributive education programs. Thirty-nine offered office education programs and forty-four offered trade and industrial programs.

Graph 5 shows that, while 469 secondary school attendance centers offer reimbursable vocational programs, only 278 of these attendance centers provide gainful occupational training. Only 103 school attendance centers offer more than one reimbursed job-oriented vocational program for their students.

Section 257.25 of the Iowa Code required that a minimum of five units of practical arts shall be taught in grades nine through twelve each year. Practical arts may include such subjects as business education, commercial typing, industrial arts, homemaking, distributive education, office education, health occupations and agriculture. (9 -1122) A unit shall consist of one academic year (of) instruction in the subject. The median number of units offered by the 123 school districts with an enrollment of 500 or less is 10.5 for these areas. It should be pointed out that a school could offer 10.5 units by offering four years



Graph 5

IOWA SECONDARY SCHOOL ATTENDANCE CENTERS
OFFERING REIMBURSED VOCATIONAL PROGRAMS

Graph by Iowa Career Education Advisory Council

of agriculture, four years of home economics, two years of industrial arts and one year of typing.

Student Needs

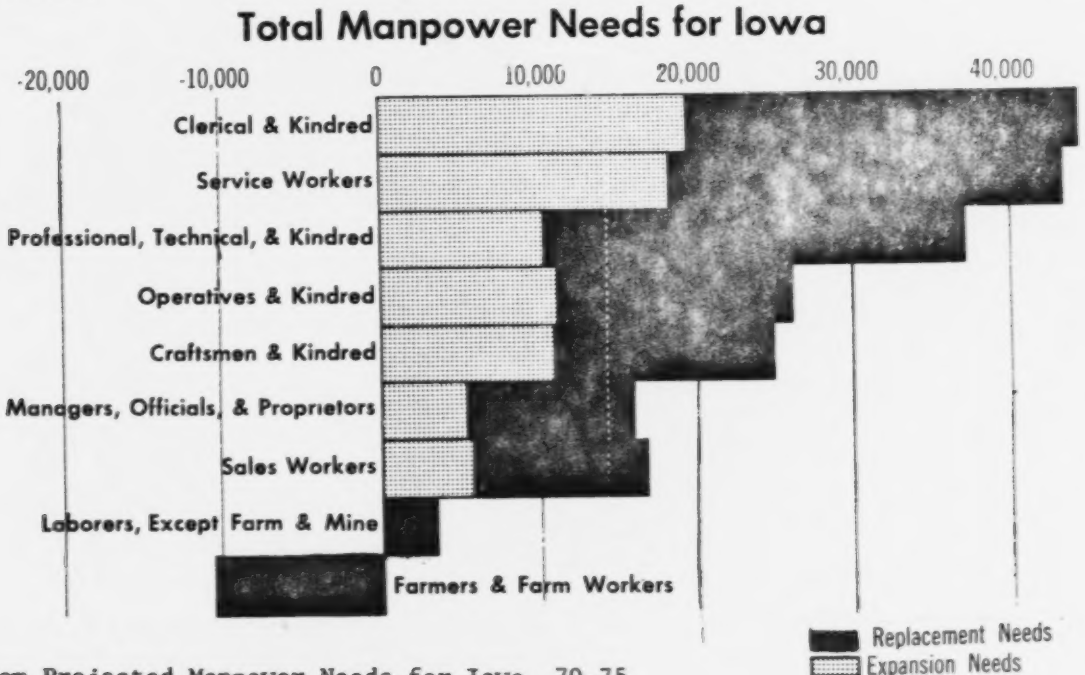
Approximately 193,437 secondary students are enrolled in grades nine through twelve. Approximately twenty per cent of the high school graduates will enroll in post secondary vocational and technical programs. (25-32) Nearly twenty-eight per cent of Iowa's high school graduates will complete the requirements for a Bachelor's Degree. (25-3) Those completing the requirements for the Bachelor's Degree represent sixty-two per cent of those that started work toward the degree which means that thirty-eight per cent dropped out or left school before completion.

Labor Market Trends

The following graph indicates the manpower needs in Iowa for the period 1970 through 1975.

GRAPH 6

Iowa Employment Security Commission



From Projected Manpower Needs for Iowa 70-75

Existing Programmatic Offering

During Fiscal Year 1972, the largest number of program offerings available for secondary students were in the occupational fields of agriculture and home economics. Council field visits led the Council to observe that the State Consultants were encouraging home economics teachers to diversify their offering to provide wage earning job skills for interested students. Further intensification of this effort should be encouraged. Agriculture instructors are placing greater emphasis on providing job skills in off-farm agriculture occupations. Lesser numbers of programs are available for secondary students in trade, industrial, distributive, and office occupations. When comparing Graph 7 with Graph 6 , page 43 which outlines projected employment needs, the reader will observe that, numerically, program offerings at the secondary level do not parallel the labor market projections.

New and Expanded Program Offerings in FY 72

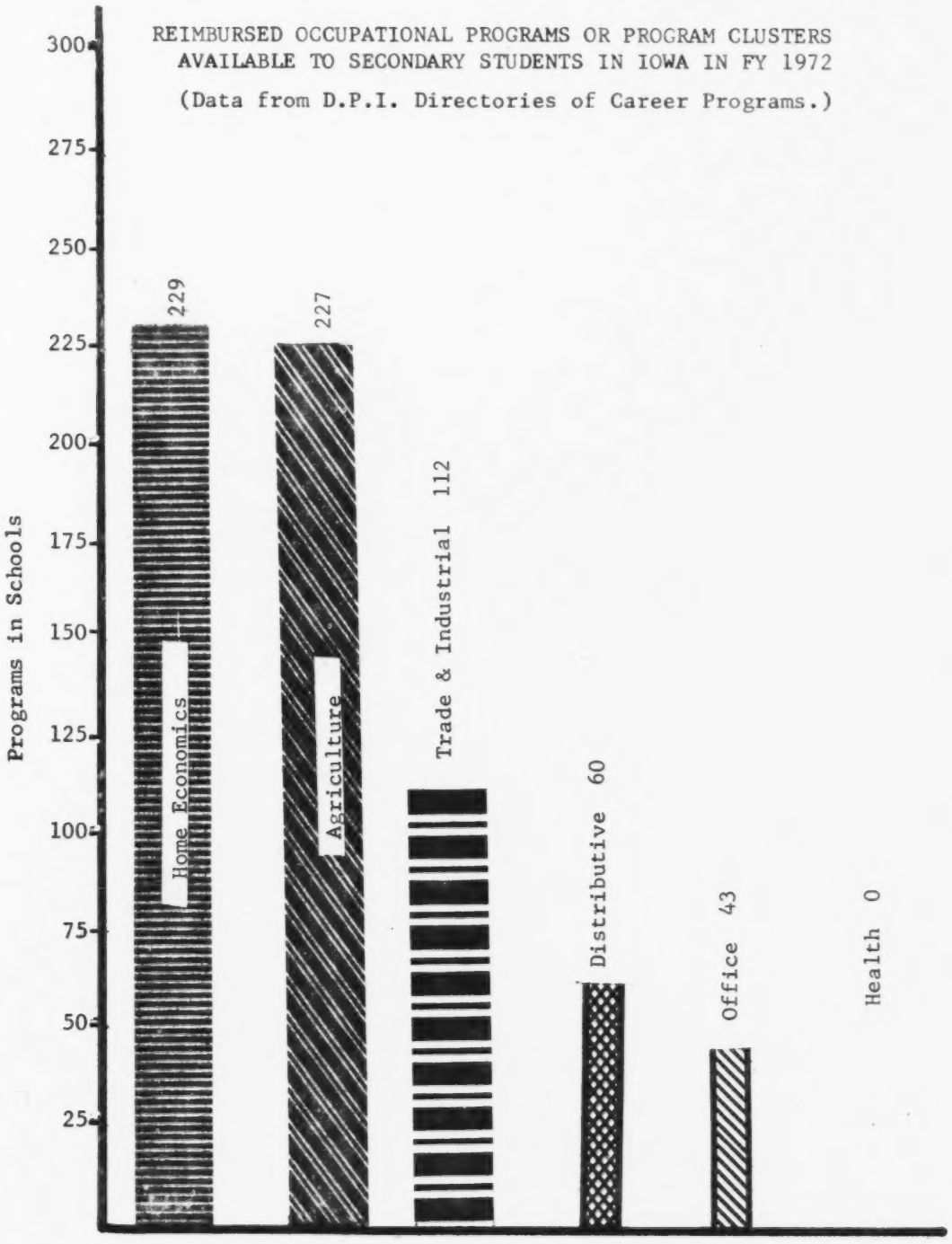
During 1972, local secondary schools offered fifty-seven new programs designed to meet the needs of secondary students with special needs. Map 3 illustrates the locations of these programs. This map consolidates the planning data found on two maps in the State Plan for Career Education. Combined, this map outlines large areas in which the dropout rates exceed two and forty-five hundredths per cent, while the encircled county names indicate those counties that were experiencing a youth unemployment rate of twelve per cent or more.

It should be recognized that the area designation in the FY '72 State Plan of dropout rates and unemployment are coarse designations

GRAPH 7

REIMBURSED OCCUPATIONAL PROGRAMS OR PROGRAM CLUSTERS
AVAILABLE TO SECONDARY STUDENTS IN IOWA IN FY 1972

(Data from D.P.I. Directories of Career Programs.)



1. Where more than one teacher is teaching in the same occupational cluster in one school location, the program is counted as one program.

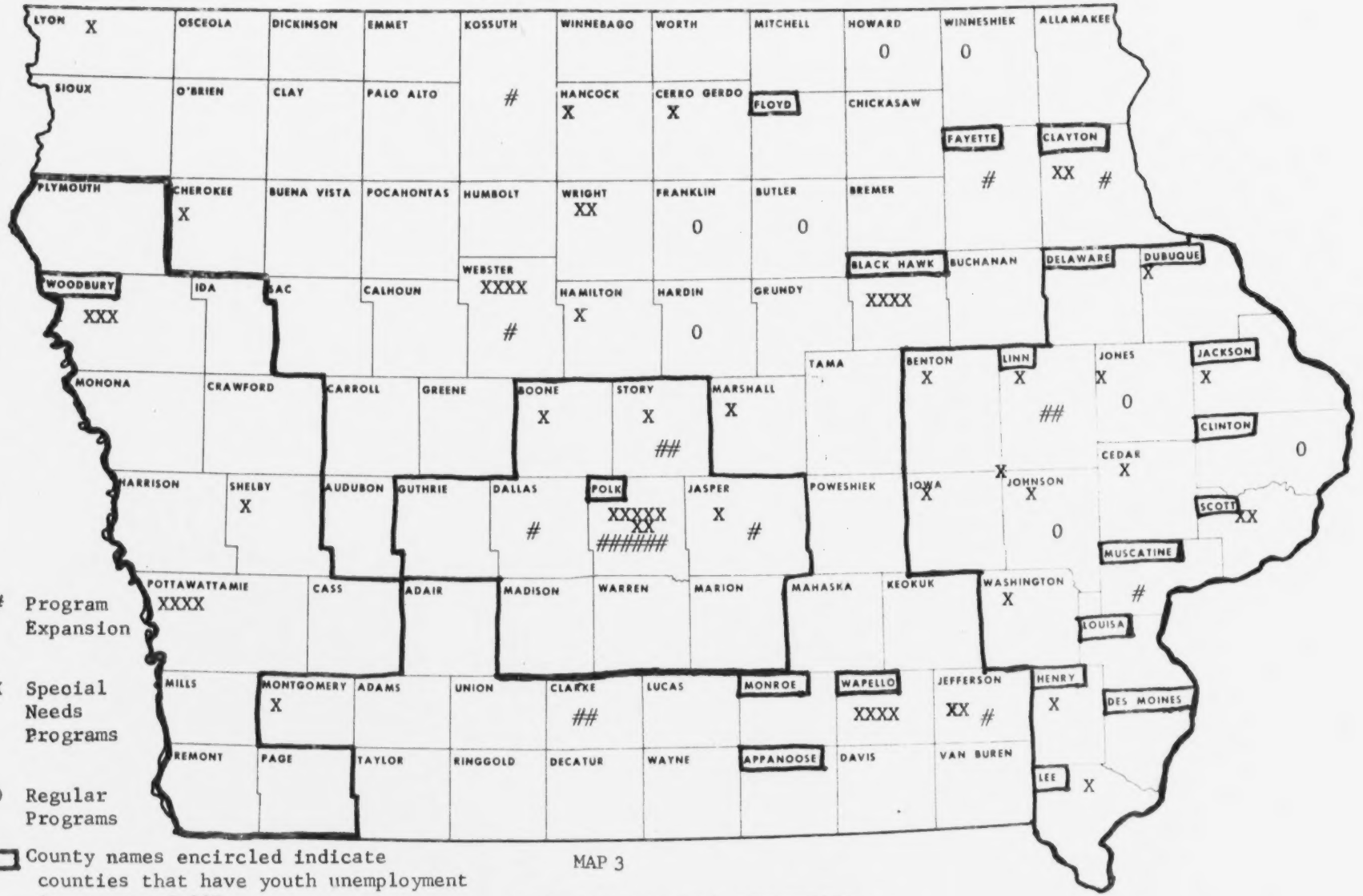
2. Where the program is more than one year in duration, it is counted as one program.

3. Cooperative type programs of similar type located in one school are counted as one program.

4. Home Economic programs total includes offerings in 46 junior high schools in the State.

Graph by Iowa Career Education Advisory Council

DATA FROM DPI LIST OF SPECIAL NEEDS PROJECTS AND NEW OFFERINGS FOR FY'72
AND 1972 STATE PLAN FOR CAREER EDUCATION
Map by Iowa Career Education Advisory Council



Program Expansion

X Special Needs Programs

0 Regular Programs

County names encircled indicate counties that have youth unemployment in excess of 12%

Encircled multi-county areas represent areas of drop-out rates in excess of 2.45%

MAP 3

SECONDARY PROGRAMS REIMBURSED
FOR THE FIRST TIME IN FY'72

and most likely do not apply to all school districts within the large multi-county areas or in the individual counties. At the time of this writing, the 1973 Amendments to the State Plan for Career Education have been completed. This update reflects high youth unemployment by individual county and a high dropout rate by school district. This reduction in tolerance should provide the opportunity for improvement of the "management by objective" program that has been implemented by the Department of Public Instruction, since it will be possible to determine whether school districts that are in the greatest need of programs for this students are implementing them.

With respect to program implementation during FY '72, the reader will observe that nine counties experiencing high youth unemployment did not implement any new special needs programs.

Special Needs

It is possible that many youth have handicaps or learning disabilities in addition ot lacking job skills that prevent them from finding employment in the labor market. The reader should also note that eight local school systems in counties that reportedly did not have high dropout rates or high youth unemployment did start special needs programs. The majority of these counties depend mostly on agriculture for their economic base. Considering the remaining program starts during FY '72 to serve secondary handicapped or disadvantaged students, one finds that twenty-seven programs were started in the larger metropolitan counties of the state while seventeen programs were located in the predominately rural counties. General conclusions cannot be drawn about the reasonableness of special needs

program locations due to the coarse data contained in the State Plan. Because of refinements found in the FY '73 Amendments to the State Plan, it will be possible to more accurately measure the future effectiveness of the program development effort.

Part B (Regular) Vocational Programs

During FY '72, eight new regular offerings were established in eight different secondary schools in the state. Five of the offerings were in the field of home economics while one new offering each was established in distributive education, office education and cooperative trade and industrial education.

The expansion of existing reimbursed vocational education offerings was far greater than the establishment of new offerings. A total of twenty additional teachers were employed with the greatest number added occurring in the field of home economics (16), followed by the addition of four vocational agriculture teachers.

With respect to the location for new and expanded vocational offerings, the reader will find by reviewing map 3 , on page 46, that ten new offerings or expansions were located in counties that were not experiencing high dropout rates or high youth unemployment while eighteen new offerings and expansions were located in areas of the state experiencing high dropout rates and counties experiencing high youth unemployment.

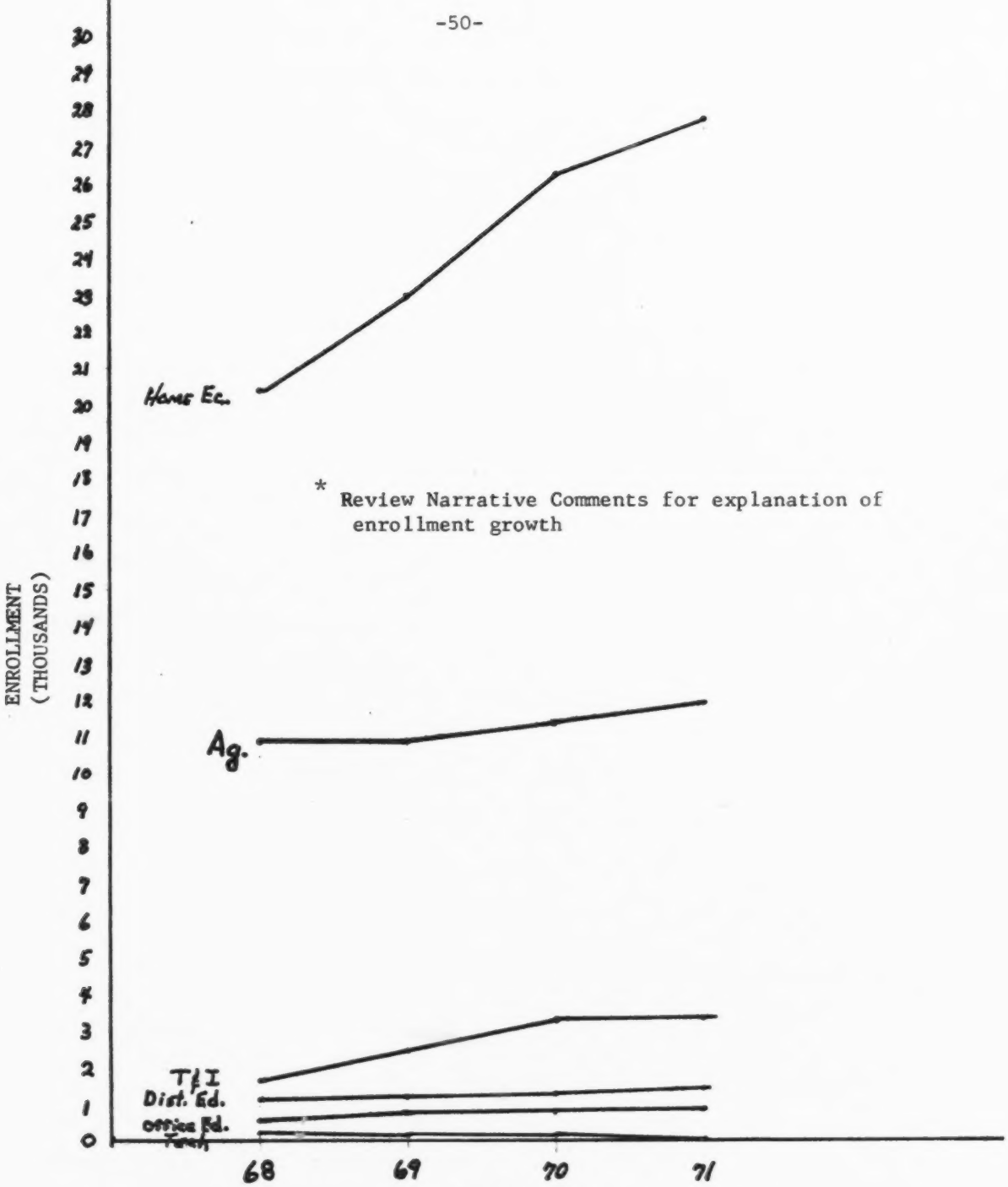
It is apparent that the greatest emphasis this past year, in the secondary schools, has been placed on developing programs to satisfy the job preparation needs of the handicapped and disadvantaged

student. It is further important to note that emphasis on development of new and expansion of existing programs continues to be placed on home economics programs followed by offerings in agriculture.

State-Wide Enrollment Trends

The enrollment in various reimbursed vocational programs offered at the secondary level through FY '71 should be reviewed as a measure of annual progress. By referring to Graph 8 , page 50, the reader will note that total secondary enrollment growth increased slightly more than 2,500 students in 1969, when compared to 1968. The growth in FY '70 nearly doubled the FY '69 growth. This was due, most likely, to a change in the system for student accounting. During and prior to FY '69, if a student enrolled in two consecutive courses in a field of vocational instruction during one year, the student was counted as one enrollment. Beginning with the annual report for FY '70, if one student enrolls in a two-course series in one vocational field during one year and then terminates upon completion of the first course and happens to be replaced in the second course by another student, the enrollment for the two-course series is reported as two students. For this reason, Graph 8 , on page 50, does not accurately report the enrollment growth in programs from FY '68 through FY '71. Generally, agriculture, trade and industrial, distributive, office and technical education offerings do not function on a course-semester basis and, therefore, do not reflect as great a deviation in 1970 as does home economics. The reader should review the graph, as it will give him a visual picture of relative enrollments.

35,878	38,417	43,445*	50,211*	TOTAL ENROLLMENT



* Review Narrative Comments for explanation of enrollment growth

GRAPH 8

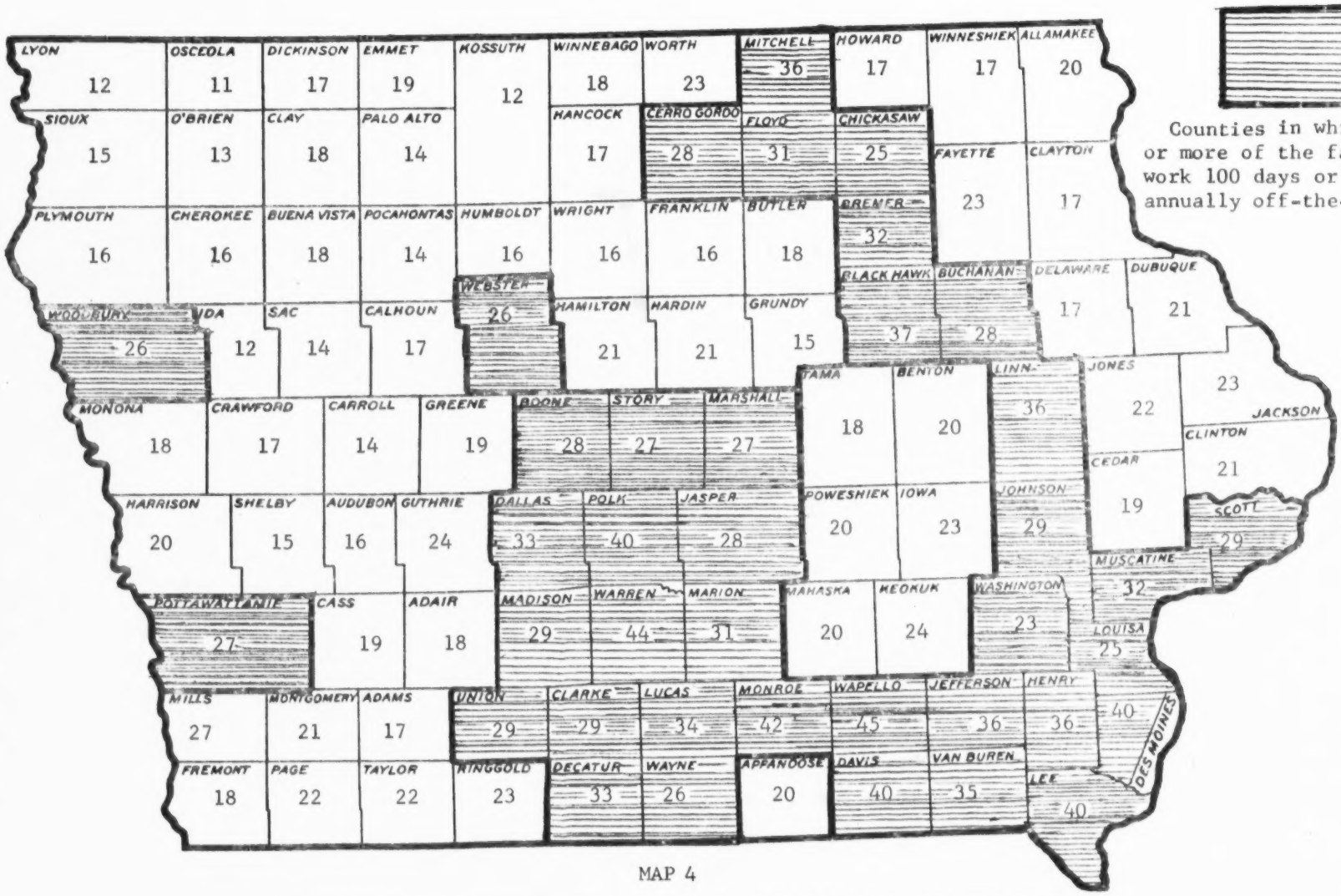
STUDENT ENROLLMENTS IN SECONDARY VOCATIONAL-TECHNICAL PROGRAMS

Source - Annual Reports for Career Education - FY 68, 69, 70, 71

Graph by Iowa Career Education Advisory Council

Agricultural Employment Trends

During the last decade, numerous authorities have been reporting the decline in the number of persons employed as farm operators or farm managers. This has been caused by the increased mechanization of farming and the increased use of chemicals to selectively retard and promote plant growth. While the number of farm operators and managers has decreased because of mechanization and chemical technology, increasing numbers of persons are employed as service personnel to support the work of the farm operator and manager. Another group of rural adults located near the larger metropolitan areas of the state find employment in manufacturing and service occupations in these metropolitan areas while retaining a farm to supplement their city income. In Iowa, the proportion of farmers working off farms 100 days, annually, rose from fourteen per cent in 1959 to twenty-three per cent in 1969. The proportion of farmers working in off-farm jobs tended to be higher near urban areas and in areas where farm income was lowest. Map 4 indicates the counties with twenty-five per cent or more farmers engaged in off-farm employment. (30) During the year 1970, farms in the Seventh Federal Reserve Bank District, consisting of the states of Michigan, Indiana, Wisconsin, Illinois and Iowa experienced, for the first time, an off-farm income greater than their net farm income. There are fewer Iowa farmers working off farms 100 days or more than can be found in Michigan or Indiana. A trend is apparent which suggests that increasing numbers of Iowa farmers in selected portions of the State may look toward earning greater amounts of their income from off-farm employment.



MAP 4

PERCENTAGE OF FARMERS WORKING OFF THE FARM 100 DAYS OR MORE ANNUALLY

Source: "Business Conditions" Federal Reserve Bank of Chicago

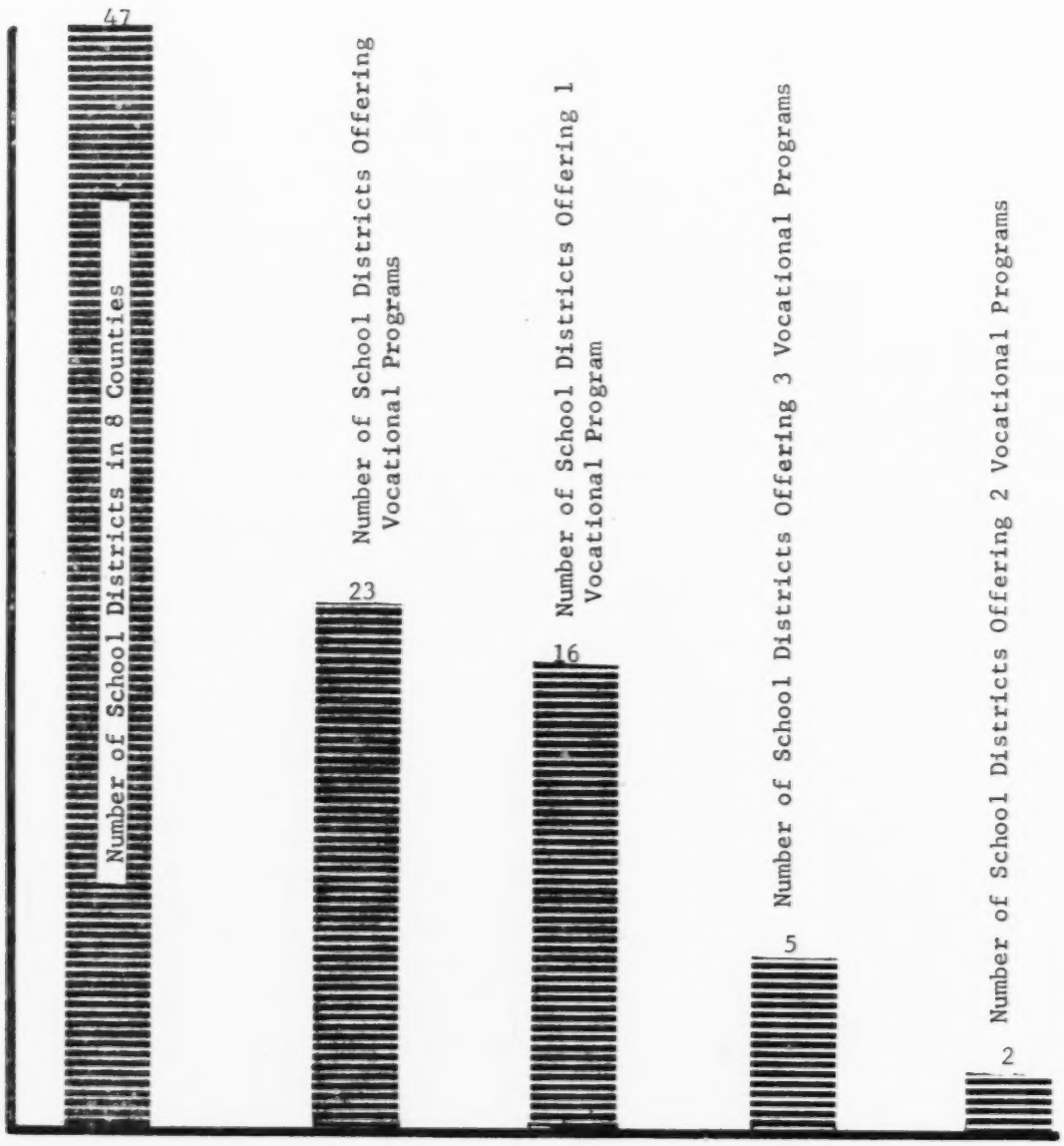
A Microscopic Example

Because of the significant trend toward larger numbers of farmers working in off-farm employment, it seems appropriate to take a microscopic view of efforts expended by schools to provide their graduates with skills and technical knowledge to be successful in farming or agriculture-related employment and employment in manufacturing and service occupations generally found in neighboring urban areas. In order to accomplish this, eight counties around Polk County were selected for analysis since off-farm employment of 100 days or more per year ranged between twenty-seven per cent and forty-four per cent of all farmers in these counties. The reader should refer to Map 4 to identify other counties experiencing the same phenomenon. Marion, Madison, Marshall, Warren, Boone, Story, Dallas, and Jasper Counties contain forty-seven school districts which offer the students a total of seventeen programs in distributive, office and trade and industrial education. Seven of the trade and industrial programs are cooperative programs and do not provide the institutional type of occupational preparation. Nineteen school districts provide vocational agriculture programs. Graph 9 illustrates the limited range of vocational opportunities available to one-half the students enrolled in schools surrounding Polk County. It appears that, individually, these school districts' enrollments are too small to provide comprehensive secondary school offerings of vocational programs.

The reader should observe that twenty-five per cent or more of the farmers in thirty-seven counties (more than one-third of the state) find employment of more than 100 days per year off the farm. The

GRAPH 9

VOCATIONAL PROGRAMS IN THE 8 COUNTIES AROUND POLK COUNTY


47
Number of School Districts in 8 Counties
23
Number of School Districts Offering Vocational Programs
16
Number of School Districts Offering 1 Vocational Program
5
Number of School Districts Offering 3 Vocational Programs
2
Number of School Districts Offering 2 Vocational Programs

These programs are offered in schools that represent enrollments of approximately 1/2 of the secondary students in the 8 counties.

(Data from Department of Public Instruction -
- Listing of Secondary Vocational Offerings by County)

Graph by Career Education Advisory Council

majority of the 164 school systems in these thirty-seven counties do offer reimbursed vocational programs. In most cases, the offering is limited to one or two types of programs. School districts in seventeen of the counties experiencing high rural work migration did implement new special needs programs. The vast majority of the expansion or new program starts occurred in home economics.

By referring to Map 3 , found on page 46, the reader will note that many of the counties which experience significant farmer out-migration for work are also counties that experience youth unemployment in excess of twelve per cent and are counties that have youth dropout rates in excess of two and forty-five hundredths per cent.

It appears that the youth being raised in counties historically experiencing high out-migration for work will need expanded vocational opportunities. An expanded offering should better equip them for employment in urban work centers.

Educational Opportunities - Polk County

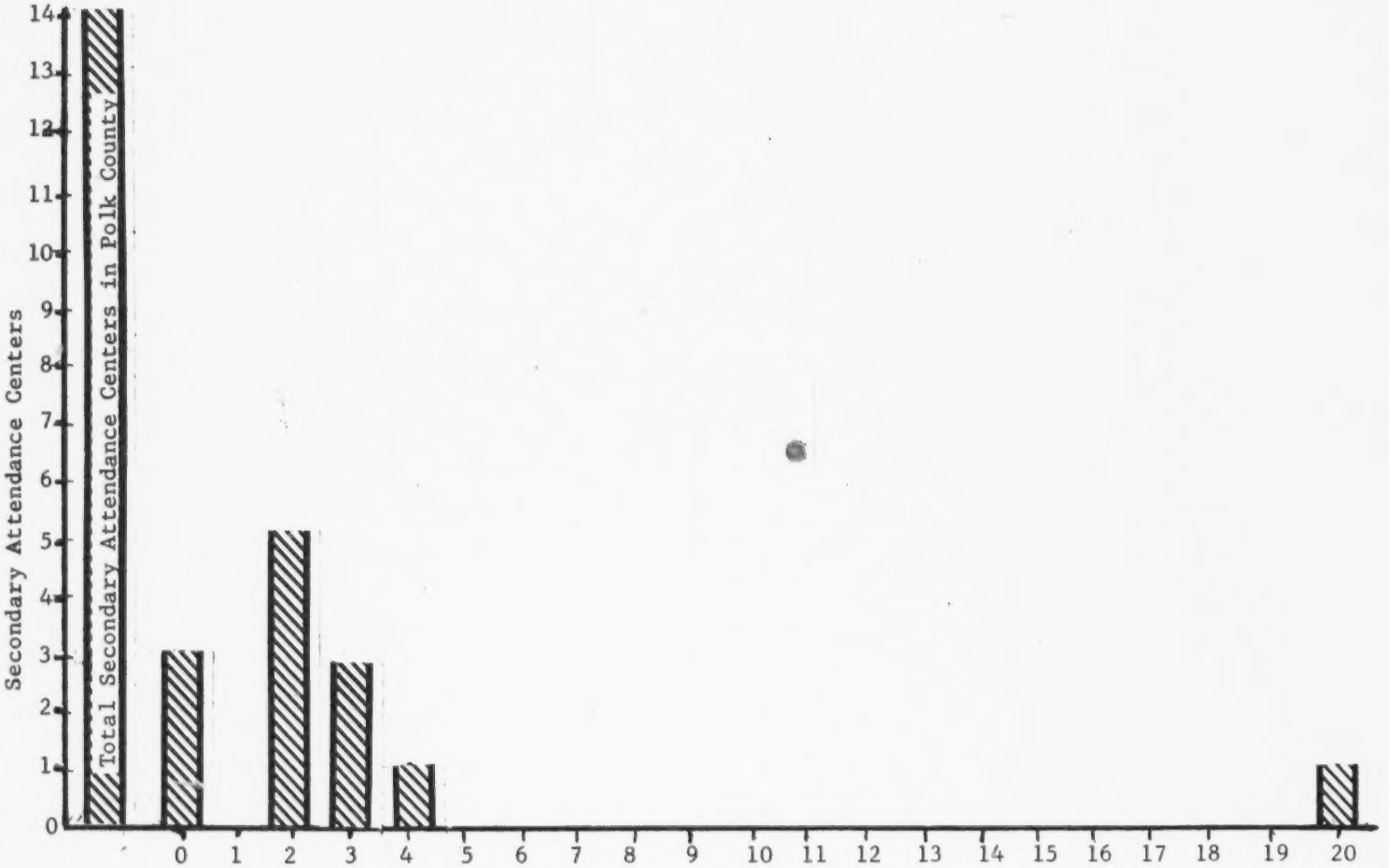
Polk County contains nine school districts with fourteen secondary attendance centers enrolling 13,240 students in grades ten through twelve. Three school districts, Johnston, North Polk, and Bondurant-Farrar do not provide the students with a reimbursed vocational program. The Des Moines and West Des Moines school districts have a total of 10,460 students in grades ten through twelve enrolled in seven high school buildings. The Des Moines School District has six high schools one of which makes available a broad range of vocational and technical programs to all secondary students in the City of Des Moines. The other five high school in Des Moines offer distributive education and consumer-home economics programs. Des Moines East and

Lincoln also offer a trade and industrial cooperative program. Des Moines Technical High School offers twenty trade and industrial programs, one clerical and two wage-earning home economics programs. The West Des Moines School District offers distributive education and office education in its high school.

Urbandale, Ankeny, Southeast Polk and Saydel have an enrollment ranging from 500-700 students in grades ten through twelve. All four of these school districts offer distributive education programs. Office education is offered in every school district except Ankeny. Southeast Polk and Ankeny offer the only reimbursed vocational agriculture programs in the county. Southeast Polk and Saydel offer a trade and industrial program which, like their other programs, is cooperative.

The larger school districts tend to provide a broader range of opportunities for occupational exploration than the smaller districts, although many occupational training areas are not presently available to the student.

Graph 10, page 57, indicates the number of high school attendance centers in Polk County offering vocational programs. In terms of student population in grades ten through twelve, only four per cent of the students in Polk County do not have some type of vocational offering available to them, in comparison to approximately fifty per cent of the students in the surrounding eight county area. (See Graph 9, page 54) The number of programs offered by the high schools in the eight counties around Polk County and the number of programs offered by the high school in Polk County are about the same



GRAPH 10

SECONDARY ATTENDANCE CENTERS OFFERING REIMBURSED VOCATIONAL PROGRAMS IN POLK COUNTY

Data from Department of Public Instruction - Listing of Secondary Programs

Graph by Career Education Advisory Council

with the exception of the Des Moines Technical High School which is the Des Moines metropolitan vocational center. It is evident that, without such a facility, the occupational opportunities for the students of Polk County would be greatly limited. It is also evident that other counties could expand their vocational offering by establishing a central vocational facility. The West Des Moines, Ankeny, and Urbandale School Districts which have high schools with enrollments from 500 to 1400 students offer only two vocational programs at each high school. This suggests that there are factors other than student population that determines the number of vocational offerings.

Secondary Vocational Education Offerings of Area Community Colleges and Area Vocational-Technical Schools

Several area schools have begun to assume the responsibility for providing vocational job preparation programs and career exploration programs for secondary students enrolled within the boundries of their merged area. The legal basis for this is located in Section 280A of the Iowa Code which states that the area schools shall offer:

> "...to the greatest extent possible, educational opportunities and services in each of the following, when applicable but not necessarily limited to:
>
> ...5. Programs for all students who may best serve themselves by enrolling in vocational and technical training while also enrolled in a local high school, public or private.
>
> ...8. Vocational education for persons who have academic, socio-economic, or other handicaps which prevent succeeding in regular vocational education programs.
>
> ...9. Training, retraining, and all necessary preparation for productive employment of all citizens.
>
> ...10. Vocational and technical training for persons who are not enrolled in a high school and who have not completed high school. (S.F.1202)"

Efforts of Area Schools

The Department of Public Instruction provided the Council with information on the efforts expended by area schools in providing exploration and job preparation programs for secondary students. (56) Hawkeye Institute of Technology in Waterloo began offering vocational programs in the field of building trades in the 1970-71 school year. During that year, the maximum number of secondary students enrolled was thirty-two. During the current year, FY '72, Hawkeye is enrolling fifty secondary students in building trades and auto body repair programs.

Kirkwood Community College in Cedar Rapids utilized their new facilities during the summer of 1971, to provide an exploratory experience for local secondary students. These students attended their own school during the regular school year.

Iowa Central Community College has its administration center located in Fort Dodge. That school offered engine mechanics instruction for secondary age student in FY '72. Fifty students were enrolled during the year under review. The students received their instruction in Storm Lake. This school also offered an office education secretarial and clerical program on its Storm Lake campus that served forty-four students during FY '72.

The Northwest Iowa Area Vocational-Technical School in Sheldon has offered programs for secondary school students since 1964. The secondary enrollment in 1971 averaged eighty-five students enrolled in three programs. Currently, the secondary student enrollment averaged seventy-eight students enrolled in three programs.

Southeastern Iowa Community College at Burlington has been offering acareer exploration program in auto mechanics on Saturdays during FY '72, with approximately 20 students enrolled.

During the 1971-72 school year, the Des Moines Area Community College conducted a survey of forty local school districts in an effort to ascertain the number of high school seniors that would be interested in attending that school all day, one-half day, or during the summer during the student's senior year to learn employment skills. The greatest expression of student interest occurred with students enrolled in the West Des Moines, Ames, Knoxville, Newton, and South Warren School Districts. Several of the most popular instructional programs desired by the students included auto mechanics, child care, alcohol and drug rehabilitation counseling, diesel mechanics, computer programming, law enforcement and practical nursing. (41) Recent word from officials from the Des Moines Area Community College indicates that action on implementation of programs for secondary students is being deferred until some obstacles can be worked out.

Efforts of a County School System (Exemplary Programs)

The Pottawattamie County School Board was recipient of a direct federal grant which funded an exemplary project under P. L. 90-576. The project was funded first during the 1970-71 school year. According to a report received from Dr. Earl Winters, Project Director, little emphasis was placed on providing exploratory instruction for junior high school age students. Elements of the project made

provisions for job placement. While the project is designed to function throughout the school year, it has a unique component which is the development of an extensive summer school program which provides instructional opportunities for students from schools which do not have a comprehensive vocational offering. These instructional offerings are made available in the Council Bluffs High Schools' shops and laboratories which are normally vacant during the summer. During the summer of 1971, 132 students participated in the summer workshop. (38)

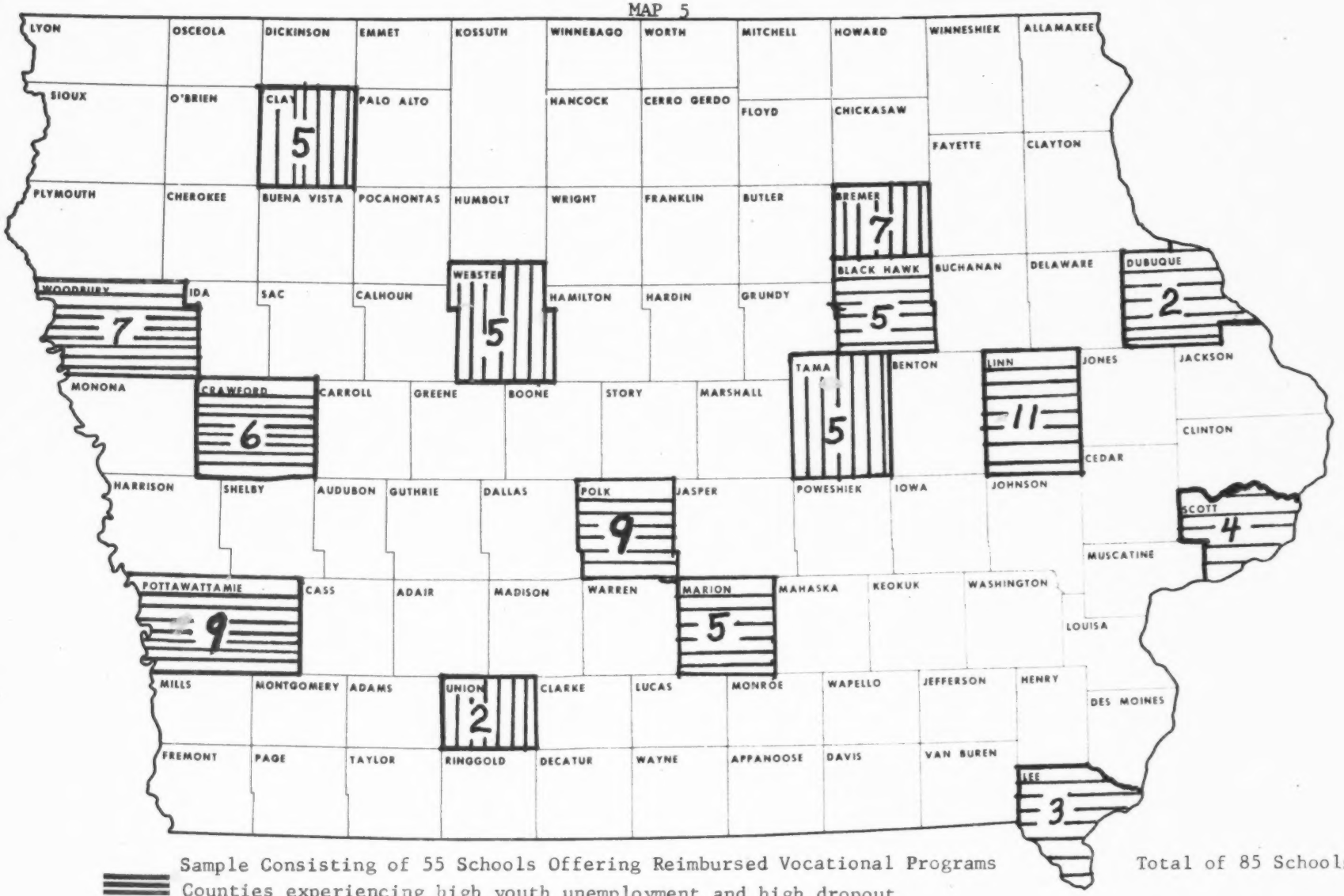
Related Academic Instruction (Exemplary)

Psychologists suggest that there is a positive relationship between an individual's success and his interest in the subject. Most students enroll in the vocational programs because they have a high level of interest in learning skills and technical knowledge necessary for competence in a particular occupational field. These students are in need of certain related academic instruction to be successful in employment. Cooperation between the academic and vocational education instructors is needed to orient specific course content to meet individual needs and interests.

The Council surveyed 195 secondary vocational instructors teaching in fifty-six schools in the state. The survey sample included all schools in fifteen counties in the state. Eighty-five secondary school corporations function in these fifteen counties, however, only fifty-six offer reimbursed vocational programs. Ten counties were selected because schools in those counties were experiencing high drop-out rates and high youth unemployment, while schools in five counties were reporting low percentage of drop-outs

SECONDARY SCHOOLS LOCATED IN COUNTIES INCLUDED IN 1972 SURVEY
By CAREER EDUCATION ADVISORY COUNCIL

MAP 5



Sample Consisting of 55 Schools Offering Reimbursed Vocational Programs — Total of 85 Schools

Counties experiencing high youth unemployment and high dropout

Counties with low youth unemployment and low dropout

Numbers indicate school districts headquartered within each county

and youth unemployment. Counties from various sections of the state were included in the sample to reduce the possibility of regional differences.

Eighty- two per cent of the secondary vocational education instructors responding to the Council survey expressed the view that academic instructors were willing to modify the focus of instructional content to meet individual students needs and interests. Nearly forty per cent indicated they met periodically with the academic instructors for the purpose of coordinating academic instruction with the job training they are providing. Fifty per cent of this group indicated they met at least once a month. Over one-half of the instructors reported their school tested individual students for competency in basic skills and then scheduled instructional programs keyed to the students' needs.

The secondary vocational education instructors were asked to respond to questions related to instruction in the areas of social science and English. Because of the way the questions on social science were constructed, the results are non-conclusive and cannot be reported with any degree of accuracy.

Communications, either written or oral, are a necessity for the success of an individual in his occupational choice. If he fails to communicate his ideas or fails to understand the ideas of others, he cannot develop the proficiency needed to accomplish his job well. The majority of the instructors expressed the opinion that the related English instruction develops skills in conference leading techniques, parliamentary procedure, writing technical reports, effective public

speaking and, also, developing a technical vocabulary useful for the consumer. Only about one-third of the instructors were of the opinion that related English instruction provides units in interpretating mechanical drawings, sketches, schematic diagrams, pictorial drawings, or that skills were developed in analyzing common terminology in legal contracts. The secondary career education instructors were further questioned concerning instruction in job application and interviewing techniques. Over seventy per cent reported the English curriculum was providing instruction in these last areas.

In the past year, the Council has made several visits to area and local schools. During these visits, the Council members had a chance to talk with secondary students. The students discussed their future plans and concerns about the high school they attended. Their feeling in regards to related instruction differs from those expressed by the instructors in the questionnaire. A written account of these meetings may be found in the Appendix. Following are selected student comments:

- Many teachers are still limiting their career suggestions toward the field of teaching. The students recognized that most teachers have a limited background about the world of work, because of their heavy emphasis on academic subjects in college.

- Many students see little value in the study of literature as a subject.

- Our academic courses are not related to what we think the real world is all about.

- Students who say they will definitely go to college do not know what they desire to study. They state that they need books on jobs!

- Some students are instructed in personal finance and business economics in their social studies classes and consumer-home economics classes.

- The persuasive ability of the teacher is sometimes the determining factor as to whether or not the course is kept in the curriculum.

- Some teachers grade leniently because the subject is required and the teachers know the student doesn't like the subject.

- Students finally admit that some of the basic subjects such as math, English, and government are essential - but they get 'turned off' by the poor quality of instruction and lack of differing instructional techniques.

- Some social studies instructors encourage a study of government through attendance at public board meetings and political party precinct meetings by giving credit for extra effort.

The Council observed that more cross-curricular planning is needed to enable the student to receive maximum benefit from related instruction. Planning sessions should be held at regular, frequent intervals to insure a maximum cooperative effort.

Program Planning for Secondary Schools

The secondary superintendents or vocational education directors of the fifty-six districts, with reimbursed career education included in the Council sample, were sent questionnaires in an effort to determine administrative attitudes. Forty-five of the secondary administrators returned the questionnaires for a response of over eighty per cent. In a short series of true or false questions, the Council attempted to ascertain the exposure of the administrators to the emerging career

education concept. It is apparent that there is some confusion among the respondents with one-third expressing the view that career education is a new name for vocational education. It should be stressed, for clarification, that vocational education is only a part of the total career education concept.

Seventy-five percent of the secondary administrators reported that their Board of Education had been exposed to essential concepts of career education.

When asked to express their reaction that clusters of occupational programs ought to be available for students in fifteen major occupational areas in order to meet student employment training, nearly thirty-eight percent of the administrators responded that their school was too small and could not provide that breadth of instruction. If needed expansion of vocationally oriented instruction is to take place throughout the State, the administrators of the smaller school districts must cooperate in implementing alternate methods to provide this training. All the administrators that responded agreed that career education and vocational education was of value to the students.

The majority of the school administrators responding indicated that exploratory areas were available in the following areas: office occupations, ag-business, natural resources, fine arts and humanities, and consumer-homemaking occupations. A moderate amount of administrators reported offering exploratory areas in marketing and distribution, construction, health occupations, and manufacturing.

Very few indicated exploratory instruction was being offered

COUNCIL QUESTIONNAIRE ITEM #22

In the chart below, please indicate: (1) The number of programs you are offering in each of the following areas; (2) The number of new programs you are planning in each of the following areas in the next three years, and (3) The number of programs you plan to discontinue in the next three years.

	Orientation to the World of Work	Work Exploration	Entry Level	Semi-Skilled	Skilled	Technical	Professional
DISTRIBUTIVE ED.	[12]	[12]	[13]	[10]	[3]	[2]	
1. Present Programs	30	31	22	17	8	3	
2. New Programs	[2] 28	[4] 22	[5] 5	1	[1] 6	1	
3. Discontinue							
OFFICE EDUCATION	[20]	[21]	[21]	[15]	[10]	[3]	
1. Present Programs	45	44	26	25	11	3	
2. New Programs	[2] 28	[3] 21	[4] 8	[2] 5	[1] 4		
3. Discontinue							
AGRICULTURE	[14]	[11]	[10]	[9]	[3]		
1. Present Programs	17	14	10	14	3		
2. New Programs	[3] 11	[4] 4	[3] 4	[2] 2	1		
3. Discontinue					1		
HOME ECONOMICS	[19]	[17]	[15]	[9]	[4]	[2]	
1. Present Programs	49	52	37	21	10	2	1
2. New Programs	[3] 29	[4] 22	[4] 7	2	2		
3. Discontinue							
TRADE AND INDUSTRY	[13]	[16]	[14]	[12]	[4]	[2]	
1. Present Programs	33	39	49	34	4	2	
2. New Programs	[2] 28	[2] 2	[5] 12	2	[2] 3	1	
3. Discontinue			[2] 2				
HEALTH	[8]	[9]	[7]	[3]			
1. Present Programs	8	9	7	3			
2. New Programs	9	2 12	3 4	1	2 2	1	
3. Discontinue							
SERVICE			[2]				
1. Present Programs			2	1			
2. New Programs	1	2 5	3 4	1	1	1	
3. Discontinue							

OTHERS (Specify Below)

TABLE 1

PROGRAM EXPANSION PLANS PROJECTED BY LOCAL SCHOOL ADMINISTRATORS

[ ] Number of Schools Responding

45 of 55 Administrators Returning Questionnaire

in the following areas: personal service, public service, transportation, communications-media, environment and hospitality and recreation. When questioned about what exploratory programs should be added to the career education offering, twenty percent of the administrators failed to identify any additional course offerings, while the majority thought that programs should be added in the fifteen clustered areas.

Program Justification

The school administrators were also questioned about the source data they used for justifying and establishing new programs in vocational-technical education. Most of the administrators ranked student statements of interest as being the most important in establishing new programs. Labor market surveys of the local community was ranked second in their selection and suggestions from the business community ranked third.

An analysis of the area ancillary manpower planning board meeting minutes reveal that very few local secondary school superintendents or their representatives serve on the area committees or participate in any of the planning functions. The fifteen area Committees on Improvement of Education (these are organizations of local secondary school superintendents functioning within the boundaries of each merged area) should appoint a representative from their committee to attend each Ancillary Manpower Planning Board meeting.

The local superintendent representing each Area Committee on the Improvement of Education on the Ancillary Manpower Planning Board could provide valuable input to the Ancillary Manpower Planning Board as to student drop-out rates, poverty levels and the like. The local superintendent could also provide valuable feed-back to the Area Committee on the Improve- of Education concerning labor market trends to effect more viable imple-

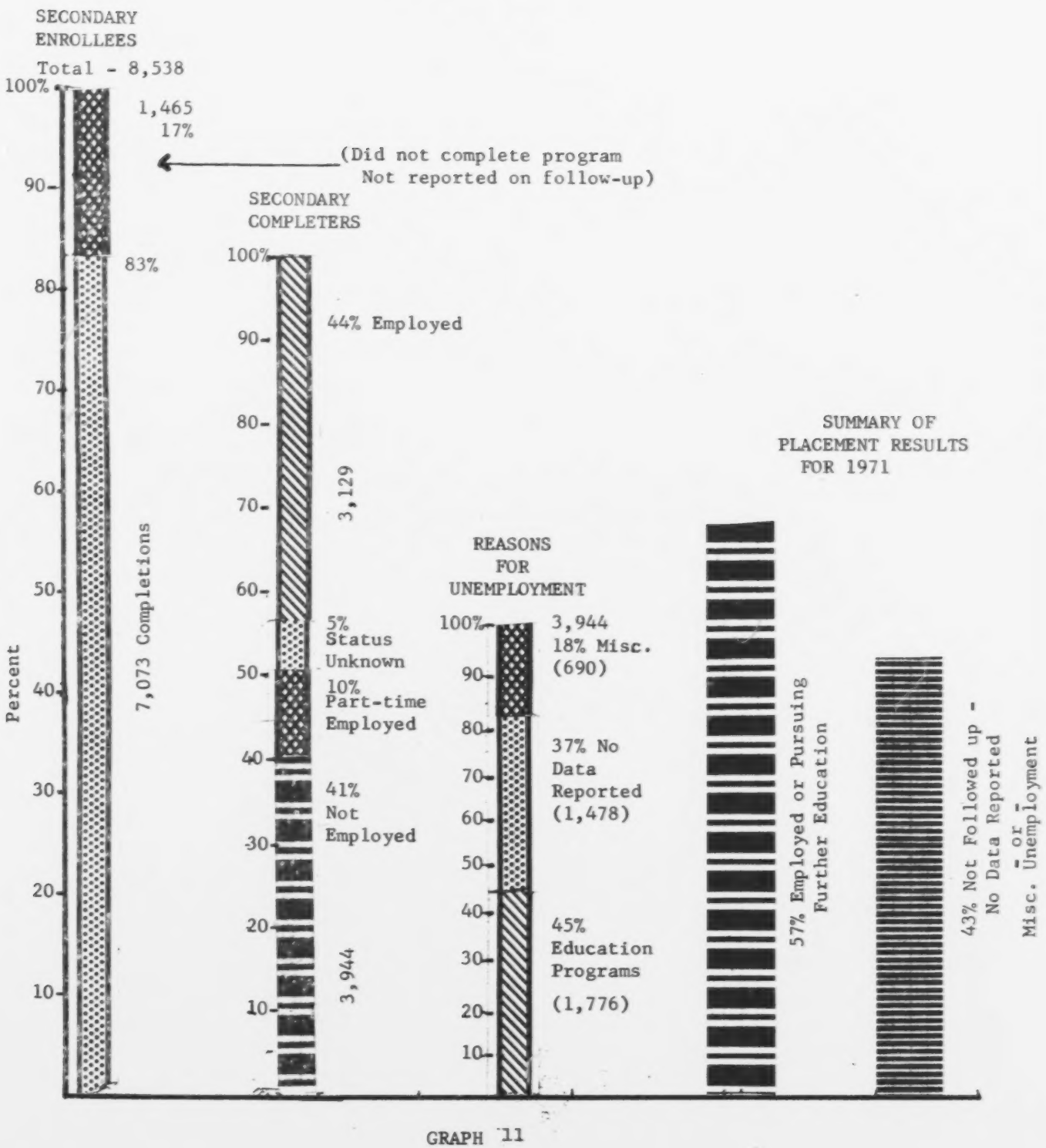
mentation of career education instructional content and vocational programs.

The secondary school administrators were asked to complete Table 1 by indicating present programs offered and new programs they are planning in the various program offerings. They were also asked to report the achievement level at which the program would function. The majority of the present programs offered by the school districts function in the first three levels of achievement which include orientation, work exploration, and entry level training. Semi-skilled, skilled and technical courses are usually offered at the eleventh or twelfth grade level. It is interesting to note that, in the area of new program planning, the vast majority of the program expansion is projected to be in the larger urban areas and only very few new programs were planned by the smaller school districts. No schools planned to discontinue any of their existing programs.

Follow-up of Career Education Students

Accurate student follow-up is an important element in the evaluation of the effectiveness of the career education efforts. It can be used with other planning information to key program offerings to labor-market and student needs. It can also be used to measure the effectiveness of existing programs and identify needs for new programs. The 1971 student follow-up by the Department of Public Instruction provided data on secondary students enrolled in 260 school districts with reimbursable career education programs. Approximately eighty-three per cent of the secondary students enrolled in career education were reported as completing the program in which they were enrolled. Graph 11 is an analysis of the secondary student follow-up conducted in October, 1971. The chart indicates that, of those who completed career education programs, forty-one per cent are unemployed, ten per cent are employed part-time, and five per cent with status unknown. The main reason cited in the follow-up study for unemployment was "continuing education". It should be noted, however, that 1,478 secondary students or thirty-seven per cent did not indicate the reason for unemployment. In the summary of placement results for 1971, a final analysis reveals that of 8,538 total enrollees, fifty-seven per sent are employed or pursuing further education, while forty-three per cent were either not followed up, no data reported, or are experiencing unemployment for miscellaneous reasons.

The 1971 student follow-up reporting form suggests that the local schools are required to follow-up the students who do not complete the career education programs in addition to those that did. The



GRAPH 11

ANALYSIS OF SECONDARY STUDENT FOLLOW-UP-OCT. 1971

Data From 1971 Career Education Follow-Up

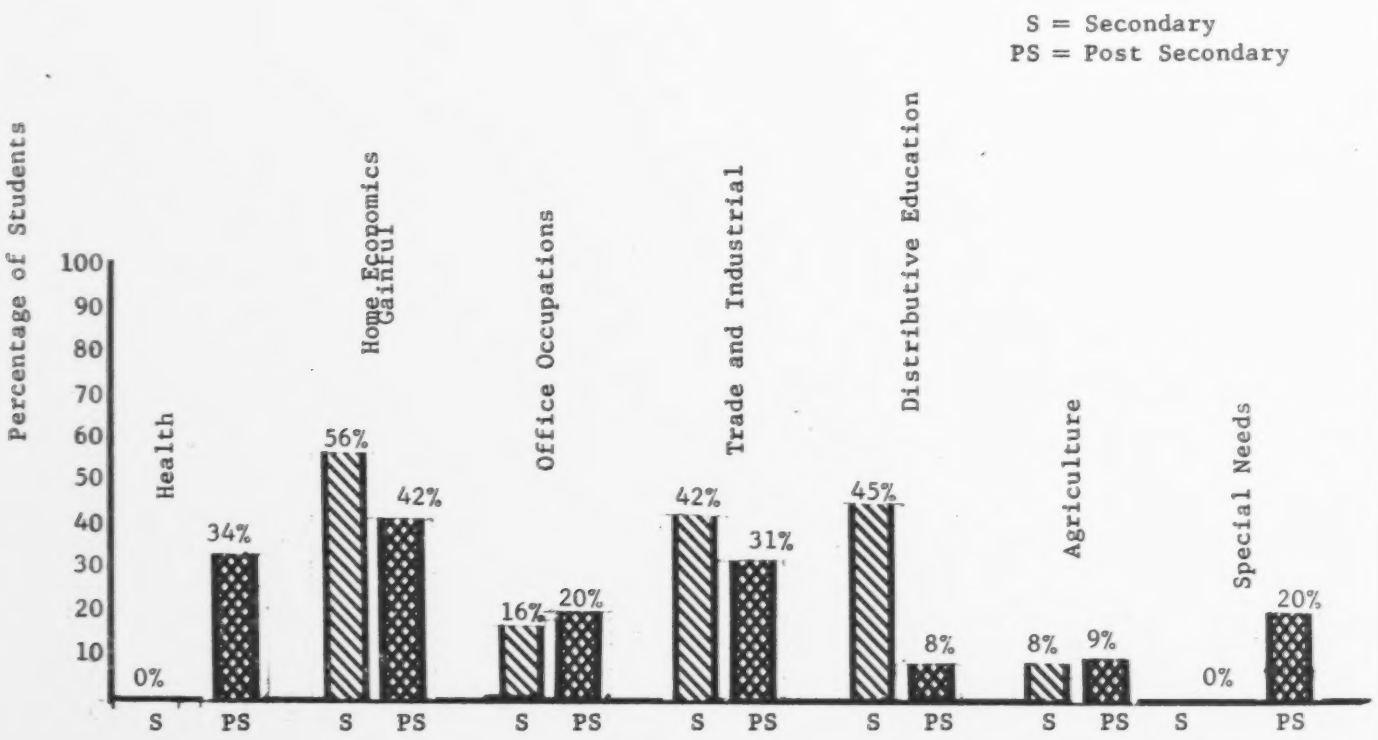
Graph by Iowa Career Education Advisory Council

follow-up report did not show that this information was used for any analytical purposes. It may be of value to know the primary reasons these students did not complete career education programs.

The 1971 follow-up also included the number of students completing programs in the various program areas. Graph 12 indicates the percentages, in each career area, of students with status unknown or not available for placement. The areas of home economics (gainful), T & I,

GRAPH 12

TERMINATING STUDENTS WITH STATUS UNKNOWN OR NOT AVAILABLE FOR PLACEMENT



Source: Career Education Student Follow-up, Iowa Department of Public Instruction

Graph by Iowa Career Education Advisory Council

and distributive education have a higher percentage status unknown than the other areas. All of these areas exceed forty per cent. Emphasis should be placed on these areas to provide more complete follow-up information.

The present method of student follow-up presents an accurate picture of the status of the students, but it fails to provide the management information needed by local education officials for administrative action. The main purpose in a follow-up is to determine what happens to the graduates after they leave their vocational programs, not just in terms of being employed or unemployed, but how well the training he received prepared him to enter an occupation and achieve some degree of success.

The Department of Public Instruction has established a procedure of writing to Area School Superintendents who are responsible for vocational programs for which poor placement is evident. The letter suggests that the Area Superintendent should initiate action to correct the problem. This is a commendable procedure, in that it provides assistance to the school superintendent who may not be aware of program deficiencies relating to poor student placement. At present, this effort has not been implemented for programs offered by secondary schools. Future efforts should be directed toward providing this same assistance to secondary school superintendents.

Developmental Efforts

The Department is presently developing, as part of the Career Education Need Information System (CENIS) Project, a three year follow-up of students which will supplement the annual follow-up requred by the U. S. Office of Education. This effort will involve the local

schools surveying 100 percent of those enrolled in career education programs three years previously. The follow-up will question students about their success on the job, their opinion of the quality of program in which they have been enrolled, their employment experiences since leaving the program, and the like. The employers will not be questioned in this effort.

A follow-up study of this magnitude would require a great deal more time than the present means of follow-up. Most local administrators are over-loaded with their present administrative duties. It might be impractical to add the extra burden of a comprehensive student follow-up system. It may be to a greater advantage if a centralized agency would accomplish all student follow-up, thus relieving the local administrator for other duties. The centralized agency could provide usable information to the local school districts to help them develop more effective programs or improve existing programs.

The Department has also developed a system for the follow-up of all high school graduates or dropouts. The local schools identify the employment, educational, and military status of each student. This information is now being filed by the local schools with the Department as part of the "Secretaries Annual Report". This reporting has been occurring for three years. Some schools have been making curricular changes as a result of information which they now have. The state-wide extent to which this follow-up information is being used for management purposes by the local school district is not known at this time.

Alternate Method for Student Follow-up

The State of Minnesota has developed a state-wide follow-up system to determine the status of vocational students after they terminate

their vocational programs. The data is collected directly from the student and not from the institution in which he obtained his training.

Four different types of follow-up reports have been developed from the data: 1) A summary of data on all students followed up across the entire state, 2) A summary of data on students follow up in each curriculum area (e.g., auto mechanics) across the entire state, 3) A summary of data on all students followed up within each school, and 4) A summary of data on all students followed up within each curriculum area within each school.

The employers are also surveyed to evaluate the graduates by comparing them with other members of their work group.

The Vocational Follow-Up Project is conducted by a highly specialized staff which is responsive to the needs of the vocational-technical schools and the State Department in Minnesota. This approach tends to provide an efficient vehicle for gathering such follow-up information that is not evident from the Iowa system which requires each of the schools to follow-up its own students. Efficiency is increased not only in terms of the economics of being able to finance a central unit more inexpensively than it is possible to finance separate units in each of the vocational schools, but also in terms of being able to gather comparable data from each of the schools in ways in which the accuracy of the data and returns can be maximized. In a phone conversation with Dr. David Pucel, Project Director of Minnesota's Vocational Follow-Up Project, he stated that student follow-up costs averaged approximately $5.00 per student after the initial systems devemopment. This project was financed by state allocations of research funds from the federal government. (55)

While this cost may appear to be high it amounts to slightly more than seven-tenths of one per cent of the average exceptional cost for secondary vocational education programs as identified by one school district.

FINANCIAL ANALYSIS

In an effort to sample the vocational education financial needs of the secondary schools, the Council sent questionnaires to 195 secondary instructors in fifteen counties to sample their opinion. (See Map 5 , page 62). These counties contain eighty-five school districts, but only fifty-six districts have reimbursable vocational programs at the secondary level. The career education programs surveyed included: vocational agriculture, trades and industries (both cooperative and preparatory), office education, home economics and distributive. For the year under study, health occupations could not be surveyed because no reimbursable preparatory programs existed at the secondary level with the exception that health occupations training is provided as one occupational area that is offered as part of some trade and industrial cooperative programs.

Equipment and Supplies

The need for equipment varies with the type of program offering, for example, distributive programs usually are operated by the cooperative method which requires less equipment. The length of a program tends to determine the amount of equipment needed. Programs offered at the senior grade level may require less equipment than those

that function for two or more years.

The responses to the questionnaire relating to equipment will be discussed by program, rather than collectively, to provide a clear indication of the typical individual program need included in this survey sample.

Office Education

Nineteen reimbursed secondary office education instructors were included in the sample of the Council survey. Fifteen of this number returned questionnaires for a response of nearly eighty per cent. The majority of those returning questionnaires utilized both the laboratory and cooperative method for instructing their students. Nearly one-half of this group was of the opinion that their equipment was modern and up-to-date and that no replacements were needed in the near future. A slightly larger percentage expressed the view that, while their equipment is presently adequate for instructional purposes, in a short time it will become obsolete and should be replaced.

Approximately one-half of the office education coordinators that responded have expended the effort necessary to identify the number of dollars that will be needed to up-date their equipment in the future. Because the number of responses is small, the results cannot be considered to be statistically significant. However, the vast majority that did respond estimated that their future up-dating needs would cost the local school district $10,000 or less. Only one respondent reported that the replacement cost for worn-out or obsolete equipment would be $100,000. Because of the large expense involved, this program might have been designed to teach computer programming. Two-thirds of the instructors reported that their administration would be able to expend

sufficient funds to buy replacement or additional equipment of state or federal funds were available to reimburse at least fifty per cent of the cost of the equipment.

Slightly more than one-half of the instructors had presented to their administration in recent years a written "Status of Major Equipment Report" for planning and budgeting purposes. Nearly seventy-five per cent visited verbally with their administration about the equipment and supply needs while only twenty per cent had developed a five or ten year replacement or acquisition of new equipment plan to satisfy the laboratory instructional needs.

The office education instructors were further questioned concerning the extent existing laboratory equipment was used during the day for instructional purposes. More than two-thirds of the instructors reported that the equipment was used six hours during the normal school day and more than two-thirds reported that their laboratories were used for adult education programs each year.

In any laboratory situation, it is impractical to expect that all equipment and work stations are used all of the time because some instructional equipment is used in support of other equipment for teaching purposes and therefore becomes a part-time training station. Almost fifty per cent of the instructors reported that between five and 10 per cent of their training stations were vacant during the instructional periods. Slightly more than twenty-five per cent reported that between ten and fifteen per cent of their training stations were vacant during instructional periods. Only one school (six and six tenths per cent)

reported that more than twenty-five per cent of their training stations were empty each instructional period.

Agriculture

Twenty-eight vocational agriculture instructors were included in the sample of the Council survey. Twenty-two of this number returned questionnaires for a response of nearly seventy-nine per cent. Forty-one per cent of these instructors utilized the laboratory method of instructing their students while nearly thirty-seven per cent utilized the laboratory and cooperative method. Only fourteen per cent of this group was of the opinion that their equipment was modern and up-to-date and that no replacements were needed in the near future. Nearly one-half of this group expressed the view that while their equipment is presently adequate for instructional purposes, in a short time it will become obsolete and should be replaced. Twenty-seven per cent indicated that either their equipment was out-of-date but in good repair or that it was out-of-date, in poor condition and should have been replaced years ago. Approximately one-half of the vocational agriculture instructors who responded have expended the effort necessary to identify the number of dollars that will be needed to up-date their equipment in the future. Slightly over one-half of this group estimated that their future up-dating would cost the local school district $2,000 or less, while the remaining indicated the up-dating cost at $10,000 or less. Almost ninety per cent of the instructors reported that their administration would be able to expend sufficient funds to buy replacement or additional equipment if state or federal funds were available to reimburse fifty per cent of the cost of the equipment.

Nearly sixty percent of the instructors had presented to the administration a written "Status of Major Equipment Report" for planning and budgeting purposes. Approximately eighty-seven percent had visited verbally with their administration about the equipment and supplied need, while only twenty-three had developed a five or ten year replacement or acquisition of new equipment plan to satisfy the laboratory instructional needs.

The agriculture instructors were further questioned concerning the extent to which existing laboratory equipment was being used during the day for instructional purposes. The majority (sixty-four percent) of the instructors reported that the equipment was used three hours a day. This implies that many of the learning activities are conducted by other means that in-school laboratory experiences. Almost ninety percent reported that their laboratories were used for adult education programs each year.

In an effort to determine the utilization of equipment, fifteen percent responded that their training stations were vacant between five and ten percent of the time during the instructional periods. Approximately forty percent reported that between ten and fifteen percent of their stations were vacant, while fourteen percent report vacant stations between fifteen and twenty-five percent of the instructional periods. Fourteen percent report vacancies in their training stations of more than twenty-five percent of each instructional period.

Distributive Education

Thirty-three secondary distributive education instructors were included in the sample of the Council survey. Twenty-five of this num-

ber returned questionnaires for a response of seventy-six per cent. One-half of the instructors utilized the laboratory and cooperative method for instructing their students. Twenty-nine per cent of this group was of the opinion that their equipment was modern and up-to-date and that no replacements were needed in the near future.

A larger percentage (thirty-eight per cent) expressed the view that,while their equipment is presently adequate for instructional purposes, in a short time it will become obsolete and should be replaced. Approximately five per cent felt their equipment was out-of-date but in good repair. Only seventeen per cent of the distributive education instructors responding expended the effort necessary to identify the number of dollars that will be needed to up-date their equipment in the future. Because the number of responses is small, the results cannot be considered reliable. However, all of those that responded estimated their future up-dating needs would cost the local school district $10,000 or less. Over half of the instructors reported that their administration would be able to expend sufficient funds to buy replacement or additional equipment if state of federal funds were available to reimburse at least fifty per cent of the cost of equipment.

Approximately one-half of the instructors had presented to the administration in recent years a "Status of Major Equipment Report" for planning and budgeting purposes. One-half had visited verbally with their administration about equipment and supply needs, while only twenty-one per cent had developed a five or ten year replacement or acquisition of new equipment plan to satisfy the laboratory instructional needs.

The distributive education instructors were further questioned concerning the extent existing laboratory equipment was used during the day for instructional purposes. Fifty per cent utilized their equipment three hours during the normal day, while nearly thirteen per cent reported using their equipment six hours during the day. Only a small per cent (eight) reported that their laboratories were used for adult education programs each year.

In an effort to determine the utilization of work stations during each period, nearly twenty per cent reported that only five to ten per cent of their training stations were vacant during the periods. Only one school (four and one tenths per cent) indicated vacant stations fifteen to twenty-five per cent of the time, while nearly seventeen per cent report that more than twenty-five per cent of their training stations were empty each instructional period.

Home Economics

Sixty reimbursed secondary home economics instructors were included in the sample of the Council survey. Forty-four of this number returned questionnaires for a response of nearly seventy-five per cent. Forty-three per cent of these instructors use the laboratory method of instruction, while a slightly smaller percentage (forty-one per cent) utilize the laboratory and cooperative method. Thirty-seven per cent of this group was of the opinion that their equipment was modern and up-to-date and that no replacements were needed in the near future. Nearly one-half expressed the view that, while their equipment was adequate for instructional purposes, in a short time it would be obsolete and should

be replaced. Ten per cent felt their equipment was out-of-date, but in good repair. Approximately forty per cent of the home economics instructors that responded have expended the effort necessary to identify the number of dollars that will be needed to up-date their equipment in the future. Nearly thirty per cent estimated that their replacement need would cost the local school district $2,000 or less. Fifteen per cent estimated the cost at $10,000 or less. Two respondents reported that the replacement cost for obsolete or worn-out equipment would be $10,000 to $50,000. Two-thirds of the instructors reported that their administration would be able to expend sufficient funds to buy replacement or additional equipment if state or federal funds were available to reimburse at least fifty per cent of the cost of equipment.

Two-thirds of the instructors had presented to the administration in recent years, a written "Status of Major Equipment Report" for planning and budgeting purposes. Seventy per cent reported they had visited verbally with their administration about equipment and supply needs, approximately one-half had developed a five or ten year replacement or acquisition plan to satisfy the laboratory instructional needs.

The home economics instructors were questioned concerning the extent to which existing laboratory equipment was used during the day for instructional purposes. Nearly sixty per cent of the instructors reported that their equipment was used six hours during the normal school day, and fifty-five per cent reported that their laboratories were used for adult education programs each year. The majority of the instructors (sixty-one per cent) reported that less than ten per cent of their work stations

were empty each instructional period which seems to indicate maximum utilization of equipment and facilities.

Some of the home economics teachers expressed some concern about the questionnaire mailed by the Council. The following selected statements illustrate some of their views:

> "My program is home economics. Useful. Don't feel this (questionnaire) applies."
>
> "Much of this questionnaire applied to courses that teach employable skills. We do not have these courses - only consumer and homemaking skills."
>
> "This is too related to a vocational-technical school beyond high school. It is not geared in any way to include home economics."
>
> "This does not really apply to my program, as we do not offer any career education program. Even if we did, it is slanted away from home economics."

Trades and Industries

Fifty-five reimbursed secondary trades and industries coordinators or instructors were included in the sample of the Council survey. Thirty-six of this number returned questionnaires for a response of nearly sixty-six per cent. Trades and industries programs are of two types which include cooperative or preparatory. The cooperative method of instruction in T & I depends usually on one hour a day of related instruction offered by the school through the use of books and manuals and does not require a large amount of equipment. The analysis of equipment needs for T & I will be confined to the twenty-five T & I preparatory programs from which questionnaire response was received. The majority of these instructors (eighty per cent) reported that they utilized the laboratory and cooperative method for instructing their students, while twenty per

cent utilized the laboratory method only. The largest percentage of this group expressed the view that, while their equipment is presently adequate for instructional purposes, in a short time it will be obsolete and should be replaced. The next largest group was of the opinion that their equipment was modern and up-to-date for the present programs and no replacements were needed. A smaller percentage felt their equipment was out-of-date and needed replacement. Sixty per cent of the T & I instructors responded that they had expended the effort necessary to identify the number of dollars that will be needed to up-date their equipment in the future. Thirty-two per cent responded that their future needs would require from $10,000 to $50,000 for the purchase of new or replacement of obsolete equipment. Another thirty-two per cent estimated replacement costs at $10,000 or less. Three respondents reported that equipment replacement costs would be $100,000 or more. Nearly sixty-five per cent of the instructors reported that their administration would be able to expend sufficient funds to buy replacement or additional equipment if state or federal funds were available to reimburse at least fifty per cent of the cost of the equipment.

Approximately sixty per cent of the instructors had presented to the administration in recent years a written "Status of Major Equipment Report" for planning and budgeting purposes. More than seventy-five per cent had visited verbally with their administration about equipment and supply needs, while only twenty per cent had developed a five or ten year replacement or acquisition of new equipment plan to satisfy the laboratory instructional needs.

The T & I instructors were further questioned concerning the extent to which existing laboratory equipment used during the day for instructional purposes. Ninety-two per cent of the instructors reported that the equipment was used six hours during the normal school day and sixty per cent reported that their laboratories were used for adult education programs each year. Fifty-six per cent of the T & I instructors responded that between zero and ten per cent of their work stations were vacant during the instructional period. Twelve per cent reported that between fifteen and twenty-five per cent were vacant during the period. Three schools reported more than twenty-five per cent of their training stations were empty each instructional period.

The T & I instructors have indicated a definite future need for the replacement of equipment.

Summary

This unit of the annual report was probed to assist state administrators in viewing financing problems that may appear on the horizon.

The majority of secondary vocational instructors included in this survey reported that their teaching equipment was modern and up-to-date. The group that reported they had the most up-to-date instructional laboratories were the office - education instructors, while the programs with the least up-to-date equipment was in agriculture. Four out of five instructional areas reported that fifty per cent or more of the laboratories were equipped with obsolete instructional equipment that should be replaced in the near future.

The majority of instructors who reported the need to replace obsolete or worn-out equipment stated that less than $10,000 would be

be required for up dating.

A very high percentage of the instructors who reported equipment needs also reported that their administration would be able to purchase the necessary new equipment if fifty per cent of the cost would be reimbursed from state and federal funds.

The instructors were questioned about the action they had taken to appraise their local administrator of their equipment needs. Instructors in four of the five service areas reported that more than fifty per cent had developed a written "Status of Major Equipment" report that had been filed with their administrators. Over seventy per cent of the instructors had spoken to their administrators about their needs which implies that twenty per cent of the population that did not prepare a written report did take the time to speak to their administrators about their needs. More than twenty per cent of the instructors surveyed had developed a replacement plan which could be used by their administration, so that needed replacement equipment could be purchased in an orderly manner over several years.

All service areas reported a high level of usage of their laboratory facilities with few vacant training stations. There also appears to be extensive use of secondary facilities for adult education programs.

Council Observations

During the past two years, the Council has conducted five (5) of its meetings in various locations throughout the state. During these visits, the Council members have visited nineteen (19) secondary school attendance centers. The Council's observations of secondary school

facilities and equipment do not coincide with the generally favorable reports of the secondary instructors on the condition of their equipment when compared to area schools equipment. The discrepancy may be due to the small sample of schools observed by the Council or may be due to an attitude of resignation by the teachers about their teaching equipment. In either case, there is apparently the need for state administrators to review, in depth, the circumstances relating to secondary school vocational teaching equipment and to take positive steps toward improvement of the situation.

FUNDING OF SECONDARY PROGRAMS

During several recent Council field visits, some local educators attending the public hearings, raised question about an apparent inadequacy of financial assistance available to operate effective secondary vocational education programs.

State Appropriations

In an effort to identify some basis for the above comments, the Council reviewed Annual Reports filed with the U.S. Office of Education to identify the state administrative fund allocations for secondary vocational education for the biennium of 1967-69 and 1969-71. In addition, the Code of Iowa was consulted to determine the categorical aids that had been appropriated for secondary schools for the 1971-73 biennium. It became apparent that total elementary-secondary school funding needed to be identified to make a meaningful comparison. The total allocations were categorized into two (2) categories which were general aid and all categorical aids. Included in the general aid category were those specific

appropriations that had the potential of serving all students, while appropriations to meet the needs of select groups of student or to establish specific programs were listed under categorical aids. The listing of these appropriations and allocations are found in table 2 on page 90. Graph 13, page 91, shows the difference in type of state allocations for secondary schools. The reader will observe that the general aid appropriations have been significantly greater than those provided for specific purposes. Reference should be made to table 2 on page 90 which shows that in the 1971-73 biennium the categorical aids for vocational education were approximately one-fifth of the total of all categorical aids.

It should be noted that the legislature appropriated vocational funds for secondary programs the first time in the 1971-73 biennium. Previously, the legislature made a single appropriation for vocational-technical education and left the division of the funds between secondary and post secondary vocational programs to the discretion of the State Board of Public Instruction.

Tax Problems of Local Schools

Several years ago, the property owners in the State became more vocal than ever in their objections to high property taxes. As a result of these objections, the State Legislature passed a bill in 1971 which placed a ceiling on school spending and developed a formula to provide a foundation aid plan based on students enrolled in each school district. This bill called for the inclusion of all federal aids income in the calculation of the formula. This, in effect, caused federal funds to be

TABLE 2

STATE BIENNIAL ALLOCATIONS for ELEMENTARY and SECONDARY EDUCATION in IOWA

(Exclusive of State Administrative Allocations)

	1967 - 1969	1969 - 1971	1971 - 1973
A. General Instructional Aid			
1. General Aid	$161,000,000 (62-HF686) (p.696)*	$227,000,000 (63-HF368) (p.43)	$230,000,000 (64-HF121) (p.88)
2. School Lunch	———	———	$505,000 (64-HF688) (p.56)
3. Radio and T.V. (educational)	$500,000 (62-SF732) (p.118)	$1,250,000 (63-SF686) (p.28)	$2,026,570 (64-HF738) (p.62)
4. Specific School Aid	$50,000 (62-HF795) (p.65)	———	———
TOTAL	$161,550,000	$228,250,000	$232,531,570
B. Catagorical Aids			
1. Special Education	$7,000,000 (62-HF795) (p.65)	$7,000,000 (63-HF368) (p.43)	$7,400,000 (64-SF577) (p.61)
2. Migrant Education	Adult ($40,000) Migrants $70,000 (62-SF869) (p.63)	Not over $70,000 from special ed. fund	Not over $70,000 from special ed. fund
3. Driver Training	$3,400,000 (62-SF870) (p.61)	$3,400,000 (63-HF659) (p.326)	$3,400,000 (64-SF582) (p.58)
4. Vocational Education			
a. Administrative Allocation	$1,634,255 [1]	Data not available [2]	See Legislative Appropriation
b. Legislative Appropriation	($12,000,000) [3] (62-SF876) (p.64)	($13,200,000) [3] (63-SF622) (p.42)	$3,450,000 (64-HF709) (p.56)
TOTAL	$12,104,255	$10,400,000	$14,250,000

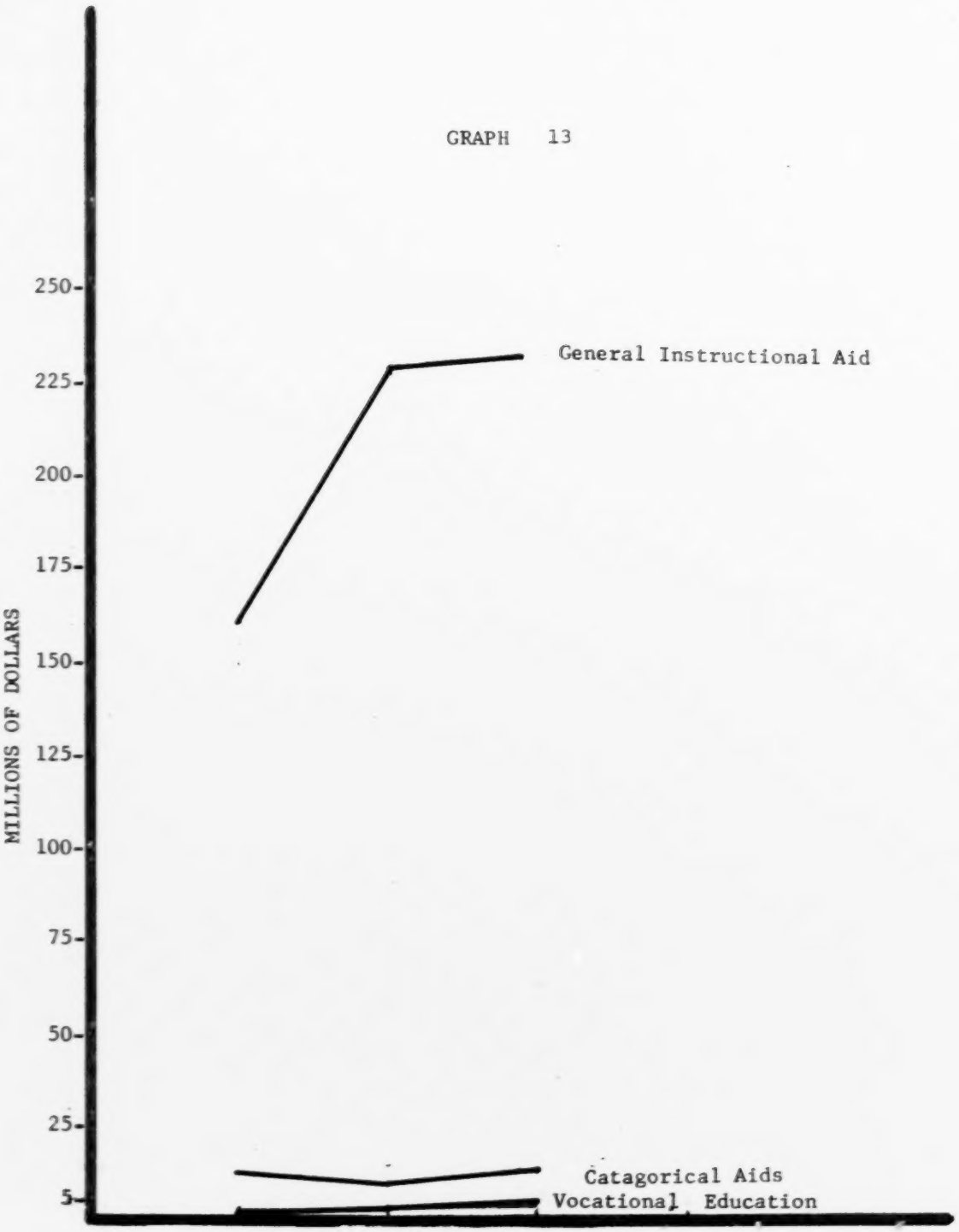
* (62-HF686) (p.696) [62 = session laws from 62nd General Assembly. HF 686 = House File 686. (p.696) = page in session laws.]

1 From annual reports to U.S. Office of Education for FY 1968 & 1969, Form 4043. This amount does not reflect allocations to special catogories such as handicapped and disadvantaged, et. al.

2 Annual report to U.S. Office of Education for 1969-1970.

3 Appropriations made leaving DPI the discretion of allocating funds between secondary and post secondary area schools.

GRAPH 13



STATE BIENNIAL ALLOCATIONS for ELEMENTARY and SECONDARY EDUCATION in IOWA

(Exclusive of Allocations for State Administration)

Graph by Iowa Career Education Advisory Council

used to supplant local tax funds, rather than supplement local tax funds. The 1972 session of the Sixty-Fourth General Assembly amended the original bill which placed a limit on school spending by allowing the federal aid funds to be used to supplement local school spending.

Federal Allocations to the State

Prior to the passage of Public Law 88-210 in 1963, it was the practice of Congress to pass laws calling for the establishment of certain kinds of vocational education programs. The Smith-Hughes Act of 1917 provided for assisting local schools with the exceptional costs incurred when establishing programs in agriculture, trade and industrial occupations and home economics. Later, the George Dean Act provided exceptional cost assistance to local schools establishing programs in distributive education. Most recently, the George-Barden Act provided exceptional cost aids for schools developing programs in practical nursing and health occupations education.

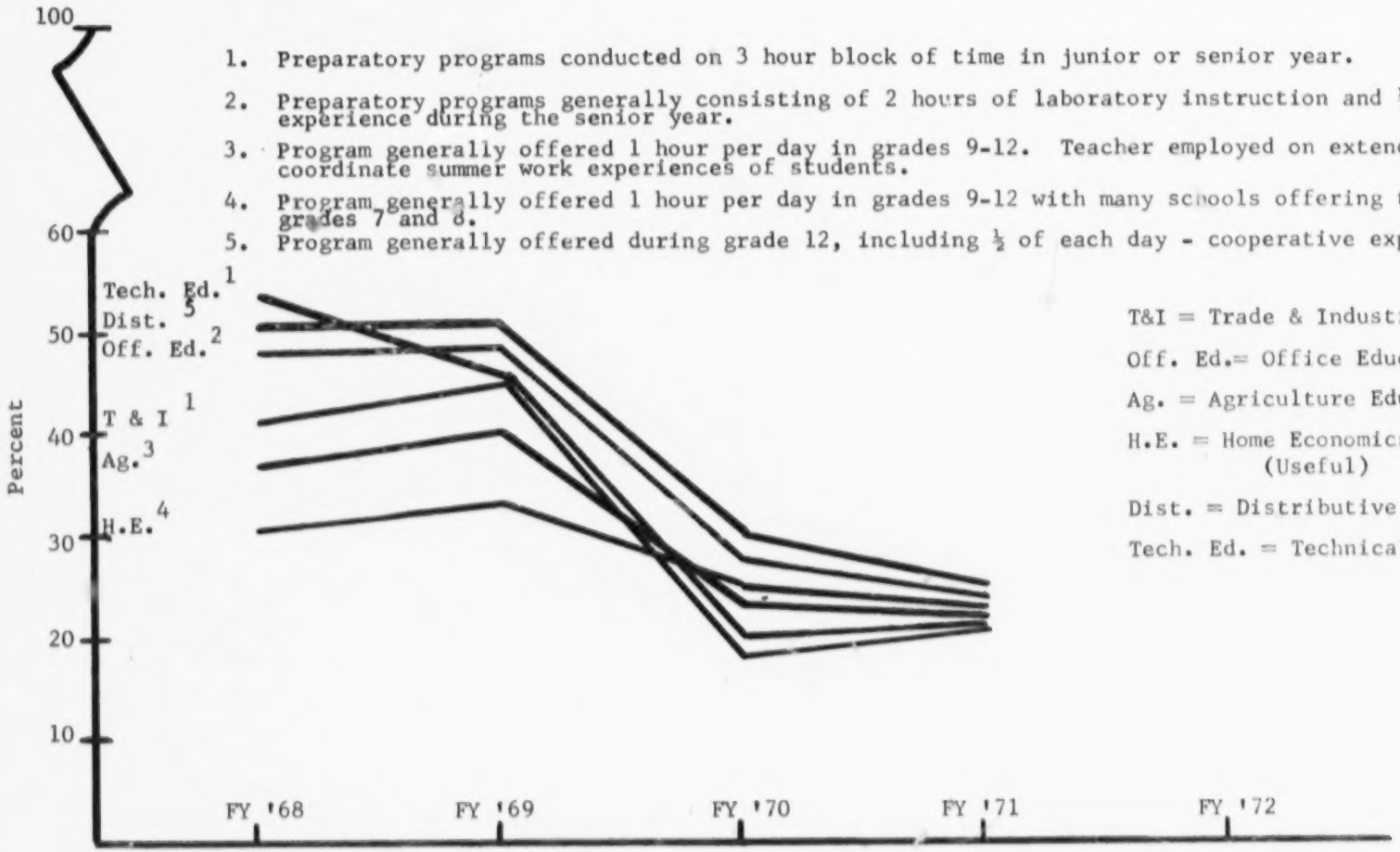
When Congress passed the 1963 Vocational Education Act they recongized the occupational areas listed above and suggested appropriations be made in accord with those acts, however, allowing the transfer of funds from one occupational area to another by request of the State Board to the Commissioner of the U. S. Office of Education. The only specified funding found in the Act required that states spend ten per cent of their allocation for gainful home economics occupations programs.

During 1968, Congress passed Public Law 90-576 which amended the Vocational Education Act of 1963. The enactment of this law left

the allocation of funds for the six occupational areas of agriculture, home economics, distributive, office, health, and trade and industrial education, in Part B of the Act, to the discretion of each State Board of Public Instruction. Exceptions to this are found in other parts of the Act which provide specific allocations to each state for research and training, exemplary programs, consumer and homemaking education, cooperative programs and work study programs.

State Disbursement of Federal & State Funds to Local Secondary School Systems

During fiscal year 1968 and several years prior, the Iowa Department of Public Instruction reimbursed local school systems at different percentages for programs in different occupational categories. At that time and, currently, a uniform accounting system is not functional and, therefore, total program costs were not identifiable. For this reason, it is assumed that departmental administrators decided to reimburse programs in the various occupational groupings at different percentages because of their assumptions about the different costs of the programs. Graph 14, on page 94, shows the reimbursement policies that have been implemented since 1968. The reader will observe that the former policy of differential reimbursement has been redirected toward a policy of uniform reimbursement for secondary school vocational programs. The only exception to this, which is not shown on the graph, is the reimbursement policy on cooperative programs. Currently, newly established cooperative programs are reimbursed at eighty-eight per cent of the cost of the instructors salary, travel and extended contract for the first year followed by sixty per cent the second year, forty per cent the third year and



1. Preparatory programs conducted on 3 hour block of time in junior or senior year.
2. Preparatory programs generally consisting of 2 hours of laboratory instruction and ½ day cooperative experience during the senior year.
3. Program generally offered 1 hour per day in grades 9-12. Teacher employed on extended contract to coordinate summer work experiences of students.
4. Program generally offered 1 hour per day in grades 9-12 with many schools offering the program in grades 7 and 8.
5. Program generally offered during grade 12, including ½ of each day - cooperative experience

T&I = Trade & Industrial Education

Off. Ed.= Office Education

Ag. = Agriculture Education

H.E. = Home Economics Education (Useful)

Dist. = Distributive Education

Tech. Ed. = Technical Education

GRAPH 14

PERCENT OF REIMBURSEMENT COMPARED TO AMOUNT REQUESTED
(Based on Teacher Salary-Travel-Extended Contract for Secondary Schools)

Source: Iowa Department of Public Instruction, Percent of Reimbursement to Claim

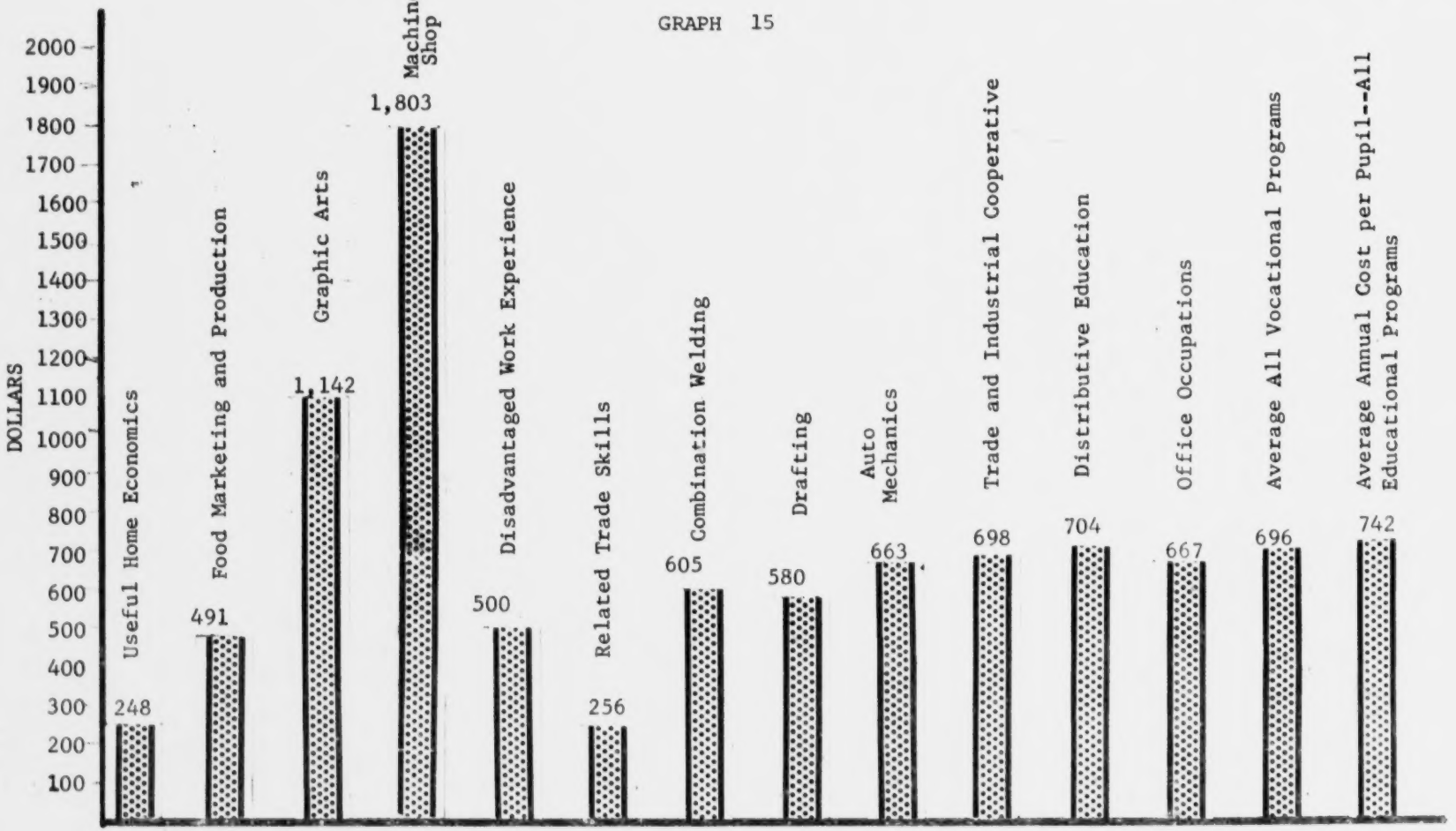
Graph by Iowa Career Education Advisory Council

twenty-two percent the fourth year.

Approximately one year prior to this report, the vocational administrator employed by the Council Bluffs Iowa School System, completed a study of the total cost (exclusive of academic instruction) of the vocational programs offered by that school system. A summary of the results of this study are shown on Graph 15, page 96. The reader will observe that the range in cost varies from a low of $248.00 per purpil, per year, to a high of $1,803.00 per pupil, per year. The costs included administrative overhead proportionate to the number of students enrolled, custodial services proportionate to the square footage of laboratory and classroom used, annual depreciation of equipment keyed to the actual projected service life of the equipment, and direct costs including utilities based on equipment draw, salaries of teachers, supplies and text materials used in the program. The average cost of all vocational programs was $696.00 per pupil. There is no single cost factor that occurs more than once, however, there is a model tendency toward per pupil program cost of $605.00 to $704.00. This cost is approximately twice that cost for all other educational programs per student.

The reader should note that the greatest program expansion and approval of new programs during FY '72 has occurred in the home economics programs. Is there a relationship between the common percentage reimbursement concept and the development of new programs and expansion of existing low cost programs? Are school administrators being forced to implement low total cost programs because they receive a

GRAPH 15



COST OF VOCATIONAL INSTRUCTION PER PUPIL PER YEAR IN FY 1971 IN THE COUNCIL BLUFFS COMMUNITY SCHOOL DISTRICT

(Not Including Cost of Academic Instruction)

NOTE: For purposes of this report, the Council obtained a cost breakdown for one vocational agriculture program in the state. The depreciation of equipment was not included in that analysis. The cost figures were not comparable. Therefore, the cost of an agriculture program is not included in this graph.

Source: Cost Analysis, Career Education Programs - 1970-71, Council Bluffs Schools.

Graph by Iowa Career Education Advisory Council

higher percentage of return on these programs when reimbursement is based on teacher salary, travel and extended contract? Does the current reimbursement system encourage school administrators to establish programs, regardless of their cost, keyed to labor market needs?

Secondary School Administrators' Attitudes on Financing of Vocational Programs

Reference is made earlier in this report to the school districts that were surveyed in fifteen selected counties in the State. It was reported that the secondary vocational instructors were mailed questionnaires. The school superintendents or vocational directors of these same school districts were also surveyed about their opinions on several matters pertaining to their school operations. A total of fifty-five questionnaires were mailed to local school administrators from which the Council received forty-five returns for a percentage of eighty per cent. One matter about which they were questioned related to financial assistance received for their secondary vocational programs. About twenty per cent of the school administrators that offered vocational agriculture and home economics programs in their school were of the opinion that current reimbursement policies yeild sufficient funds to their district to defray the exceptional cost of those programs. More than eighty per cent of their peers included in the sample did not agree. Only one (1) school administrator was of the opinion that current reimbursement practices returned sufficient state and federal tax dollars to defray the exceptional cost of the distributive education and office education programs. Fifteen school administrators disagree. The superintendents in all fifteen schools that offered trade and industrial programs report that the present amount of dollars of reimbursement was not sufficient to defray the exceptional cost of the vocational programs.

Uniform Financial Accounting System

Beginning in February of 1972, personnel in the Department of Public Instruction began working with an advisory committee of local educators to develop a uniform financial accounting system for all secondary schools in the State. One benefit from such a system is that it would provide financial management information on instructional costs for the school administrator. The system is being developed so that it is adaptable for use in the small, middle size, or large schools systems of the State. The less detailed system will be available for use in the small school system, while larger amounts of detail will be included in the systems designed for the middle size to larger school systems in the State.

This Department of Public Instruction project should be completed shortly and the project calendar calls for pilot testing during FY '73. Plans call for statewide implementation during the FY '74 or FY '75 school year. Several larger local school systems in the State are working with personnel of the University of Iowa to computerize their cost accounting system. This computerization project is being developed to be adaptable to the variations found in the cooperating schools. To illustrate, some schools use flexible modular scheduling while other are using the Carnegie unit class organization.

ALTERNATIVES TO BROADENING THE EDUCATIONAL OFFERING

One of the goals of educational systems is to provide each student with a program that includes both basic education courses and specialized occupational fields of study, thus offering the student a

choice of academic or vocational programs, all directed toward the career development of the individual.

Recommendations of the Governor's Educational Advisory Committee

The Governor's Educational Advisory Committee's Final Report, 1971, Improving Education for Iowans, made certain recommendations that, if implemented, could broaden the educational opportunities of students. Some of their recommendations are:

VOCATIONAL EDUCATION

> The Committee believes that the improvement of vocational education deserves special emphasis. This obviously means improved and expanded programs, but, more than anything, an improved image is necessary. This will require the attention of all Iowans, not only those involved directly in the educational process. The quality of guidance programs in general, and especially vocational guidance, must be substantially improved at all levels of education. Coordination of vocational programs between high schools and area schools is presently missing and is sorely needed.

COMMUNITY SCHOOL CONCEPT

> The Committee strongly endorses the "community school" concept for all educational institutions. The education function of state and local governments cannot exist in isolation from other governmental and societal problems. Iowa's educational institutions should be the focal point of community and state endeavors to solve problems. For example, all local agencies and organizations, both private and public, should be involved in the planning for new school buildings and expanded usage of existing facilities. The achievement of total community involvement in education and total educational involvement in the community is an important goal toward which to strive. (18)

Recommendation 29 states "the number of local administrative districts for elementary and secondary education in Iowa should be drastically reduced." (18) They are not stressing a reduction of attendance centers, but rather a new organizational structure consisting of county-like units. This type of reorganization could provide the basis for each

district to consolidate their occupational efforts into one central location thus providing broader, more comprehensive educational opportunities for the youth in the surrounding areas.

The Committee also recommended (Recommendation #27) that "Public school officials should increase their efforts to cooperate with non-public schools in shared-time and released-time programs." (18) The non-public schools educate 71,000 or approximately ten per cent of the elementary-secondary students in Iowa. These students should have equal opportunity to engage in occupational exploration and job preparation programs since they will also be entering the labor market. In a consolidated vocational facility, the county-like unit functioning under a reorganized administration could provide this type of opportunity more easily than the smaller school districts. The ideal goal of a comprehensive education for all students could be realized through the consolidation of numerous local schools under county-like administrative structures.

Other Alternatives

Several states, similar to Iowa (large areas with sparse population and numerous schools with few vocational opportunities for the students), have implemented systems to deal with this problem. The Council received information from five states describing their efforts of providing more students with a braod range of occupational opportunities. Generally, each state has made provisions, through legislative action, to allow school districts to voluntarily combine their efforts to form centralized vocational facilities which make vocational cluster programs available for all high school students.

Governance - The central vocational facilities in Minnesota, Pennsylvania, and Oklahoma are governed by a board with representatives from each of the cooperating school districts. Ohio offers two options for governing the central vocational facility. The managing board may be the county board when all the cooperative districts are located in the county. The second option provides for a board consisting of a member from the participating school districts. Connecticut provides state-owned vocational facilities and are governed by the State Board of Education.

Funding - Funding for these centers are provided by the participating districts and state and federal vocational aid. Funds for new construction are obtained from state aid and district bond issues. The school district's financial support of the vocational facility is in proportion to the number of students they have attending the center. The students are still counted as being enrolled in the local school district for general state aid purposes.

Transportation - Local participating districts provide the transportation and are reimbursed for this service by the state. No specific maximum distance from the high school to the center is reported, but it is generally not over twenty-five miles or thirty minutes.

Population Base - The centers vary in size according to the age level of students for which the program is offered. Generally, the student population potential at the center is found to be at least 500 (grades ten through twelve) to provide the maximum of course offerings. Courses are offered in at least ten different areas but may vary according to pupil population need, needs of the community and manpower needs.

Basic Skills Instruction - Connecticut provides both academic and technical programs in their regional vocational technical facilities. When a student enrolls in the school, he becomes a member of that student body. These schools carry on an active student government, athletic program, and the usual extra-curricular activities. These state-owned schools have been in operation for over sixty years.

In Oklahoma and Minnesota, the students attend the facilities on a half-day basis and attend their home high schools the remainder of the time. This provides for the maximum use of the equipment and facilities, and accommodates more students. Pennsylvania offers both part-time and full-time programs for the students. The part-time student receives his academic instruction in his home high school. The full-time student receives related academic courses at the vocational facility. Ohio provides most of the students with the academic instruction at the facility.

Services for Local Schools - The administrative personnel at the centers do not have the responsibilities for assisting the local school districts in developing career orientation and exploration programs, but they do work cooperatively to establish these types of programs.

Non-Public Schools - It should also be noted that centers provide educational opportunities in career education for non-public high schools on a tuition basis when adequate space is available.

Instructor Qualifications at Central Vocational Facilities - Instructors' qualifications vary with each state. In Connecticut, there are three types of certified teachers in the regional vocational-technical schools:

1. The trade instructor, who must be a high school graduate, eight years of work experience, and six semester hours of teaching methodology.

2. Related instructor, two years preparation beyond the high school, including thirty semester hours in technical subjects, three years work experience and six semester hours in methodology.

3. General education instructor, same certification as the teachers in the high school.

Ohio's instructor qualifications require the shop instructor to have as a minimum, a high school diploma, four years of apprenticeship, plus three years of recent journeyman experience. The trade technology instructor must be a high school graduate, three years of recent experience related to the trade or occupation in which the instruction will be given.

The occupational experience for Oklahoma teachers is the same as the comprehensive high schools, and the T & I teachers are required to have at least two years experience in industry. Pennsylvania has three levels of vocational instructors. Position I requires experience beyond the learing period, successful completion of an occupational competency examination, and eighteen semester hours in an approved program of vocational teacher education. The next two positions are permanent positions and are based on continued upgrading by completion of credit hours in approved courses and satisfactory teaching experiences.

SUMMARY AND CONCLUSIONS

- Slightly more than one-fourth of Iowa high school graduates will be completing the requirements for a Bachelor's Degree, while approximately twenty per cent will be pursuing some type of vocational or technical program at the post secondary level. Because less than one-fourth of Iowa's high school districts offer two or more reimbursed vocational education programs, it appears that most Iowa secondary schools are not meeting comprehensive educational needs of students. School district size, alone, is not the exclusive reason for lack of breadth of vocational offerings, since many urban and suburban school districts provice a limited vocational offering or nor offering at all.
- The greatest employment opportunities will be occurring in clerical and service occupations followed by needs for professional and technical workers, operatives and craftsmen. Approximately one-half of the school districts in the State offer vocational agriculture and home economics programs to their students.
- Existing secondary vocational program offerings do not appear to be keyed to Employment Service and State Plan projections of employment need. Program expansions and new program starts do not appear to be keyed to the projected greatest labor market needs. School systems in some counties that have high youth unemployment are not implementing new vocational programs to meet the needs of the students.
- Most secondary school administrators surveyed by the Council consider students' statements of interest of greater importance in establishing

vocational programs than labor market employment opportunities.

- Some area schools and county school systems are offering vocational and exploratory programs for students enrolled in secondary schools that do not provide this type in instruction. Some of their programs are offered during the school year, while others are offered during the summer only.
- There is some question about whether high school instruction prepares the student to function effectively in an economic society. Vocational instructors claim that instructional content has been slanted in this direction, while student statements during the Council field visits differ with this.
- Some secondary school administrators hold the opinion that career education is just a new name for vocational education.
- Many secondary vocational programs will be in need of replacement equipment in the near future. Council observations in a small number of schools lead one to the opinion that some need replacement equipment now.
- Cost of individual secondary vocational programs vary greatly, while program reimbursement has been made uniform, based on instructor salaries and travel. A uniform financial accounting system is being developed for local secondary schools, so that it may be possible to identify total vocational program costs. The current uniform reimbursement, according to selected secondary school superintendents, does not cover the exceptional program costs.
- County-like administrative units could serve to pool limited school resources and increase secondary student numbers, so that several secondary schools, under one administrative head, could implement the career education concept and broaden their vocational education offering.
- Some instructors teaching in useful home economics programs are redirecting the instructional content toward wage earning occupations.

SECONDARY SCHOOL RECOMMENDATIONS

The Council Recommends:

1. The number of vocational programs available for secondary students should be expanded greatly. Any expansion effort should be keyed to labor market needs. Highest priorities should be given to those school districts with the highest drop-out rates and districts located in counties experiencing high youth unemployment.

2. Efforts toward cross curricular planning be expanded to provide that academic instruction be oriented to the work world.

3. The follow-up effort of vocational technical program graduates should be expanded to include a survey of student attitude about the program and employer assessment of student performance. Consideration should be given to relieving local school personnel from the massive responsibility for conducting the follow-up. Possibly, some centralized agency could complete the job more efficiently and at less cost.

4. That an informational program be implemented for those involved in education and other citizens in Iowa to inform them that career education is not a new name for vocational education, but is a whole new concept of education encompassing work orientation, job exploration, and vocational education.

5. Local school administrators become members of area manpower planning boards, and that labor market trends be reviewed at meetings of Area Committees on Improvement of Education, so that future local school program development may be based on labor market needs.

6. That laboratory equipment needs be identified, so that future appropriation requests can be supported with back-up information.

7. That the future vocational program reimbursement be based on the exceptional cost of the program.

8. That re-assessment be made of selected categories for which funds have been earmarked by Congress to determine whether there is a continuing need for the earmarked funds.

9. That legislative action be taken to require the establishment of 110 or less elementary-secondary school districts in Iowa, so that the curricular offering can be made more comprehensive and that impelmentation of the career education concept be made mandatory in the legislation.

CHAPTER V

CAREER EDUCATION EFFORT IN AREA SCHOOLS

State Plan Projections The majority of programs offered at the post secondary level are funded under two parts of the State Plan. Programs conducted under part B qualify for assistance and are referred to as preparatory programs, while part G programs qualify for assistance and are cooperative programs.

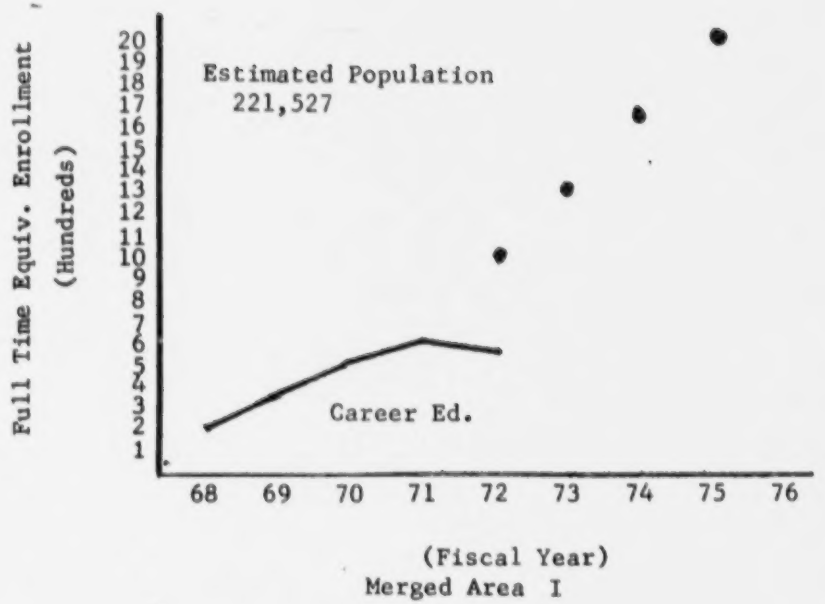
The State Plan projected that twenty-seven new occupational programs would be implemented during 1972. These programs would include five in agriculture, one in distribution, seven in health occupations, two in technical occupations, five in office occupations, five in trade and industrial occupations and one each for disadvantaged and handicapped persons. (28-III-4) These new program developments will be focused toward new and emerging occupations and these efforts will be directed toward reducing the problem of youth unemployment and underemployment. State education agency administrators reported that "further needed expansion was curtailed because of insufficient funds". (28-III-5) The type of new and emerging occupations referred to in the Plan were not identified.

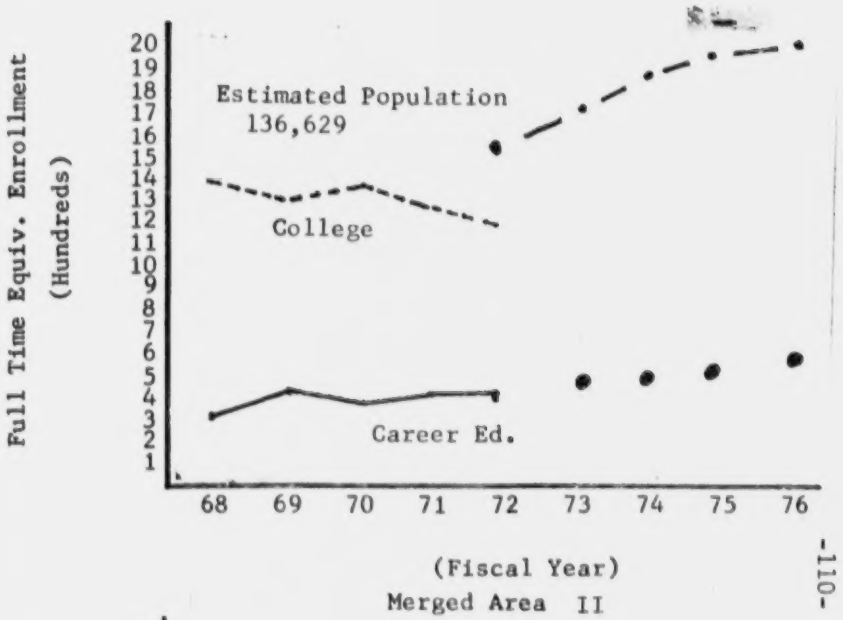
Projected Enrollment - The State Plan establishes a goal for area schools to serve 3.41 per cent of all youth in the state between the ages of sixteen and twenty-four. (28-II-25) This means that 14,560 post secondary age youth should be enrolled in post secondary vocational programs during fiscal year 1972, compared to 13,584 enrolled during fiscal year 1971. (7-43)

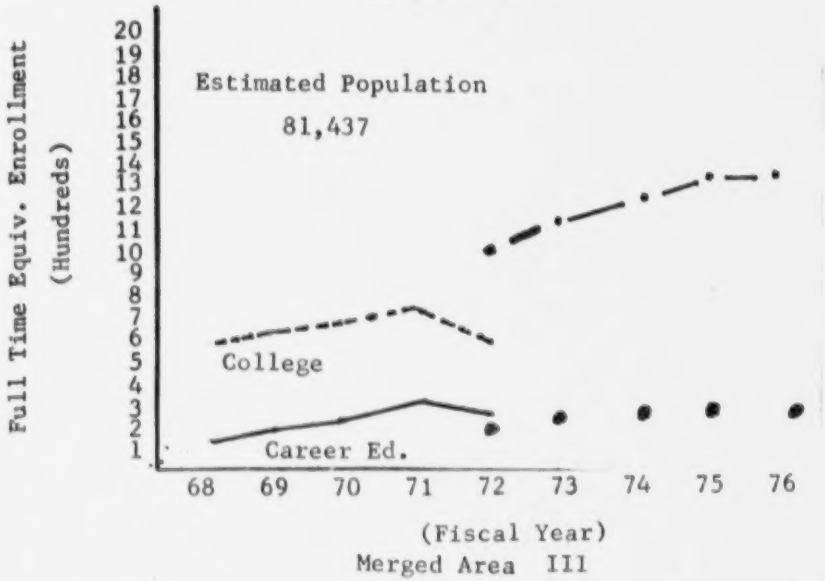
This amounts to nearly a seven per cent increase in enrollment over the previous year. Student enrollment under Part B was projected to reach 14,364, while the enrollment under Part G (cooperative) was projected to reach 191.

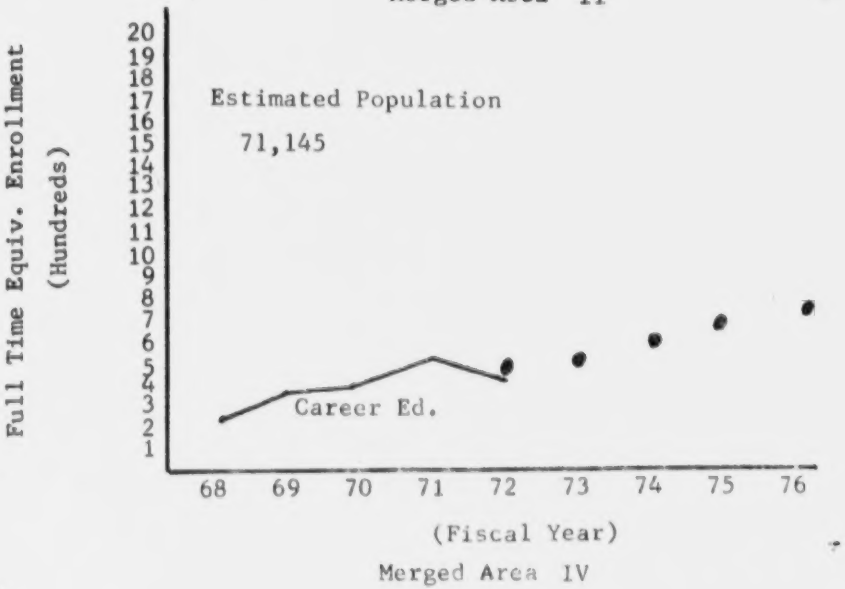
Comparative Information - The State Plan contains enrollment projections for post secondary students based on the State population of persons ranging in ages from sixteen through twenty-four. At present, the majority of youth in the State between the ages of sixteen and eighteen are enrolled in secondary schools. According to the 1970 census, there were 308,982 persons between the ages of eighteen and twenty-four residing in Iowa. (24-Table 19) The State Plan projects that 14,500 students will be enrolled in area school vocational and technical programs during fiscal year 1972. This amounts to 4.7 per cent of the population of the State between the ages of eighteen and twenty-four. During 1972, the number of secondary age students enrolled during the regular school year in area school sponsored vocational and career orientation programs was approximately 242. (56) This number represents 1.6 per cent of the projected area school enrollment during the fiscal year.

Graph 16 illustrates historical enrollment trends by area school from fiscal year 1968 through fiscal year 1972 and, also, shows predicted enrollments. The historical enrollment trends will be discussed later. The projections were obtained from a report, entitled AN ENROLLMENT PROJECTION STUDY, completed by the Midwest Research Institute under contract with the Iowa Higher Education Facilities Commission, in 1971. (15) The Reader will observe that MRI projected that in most community







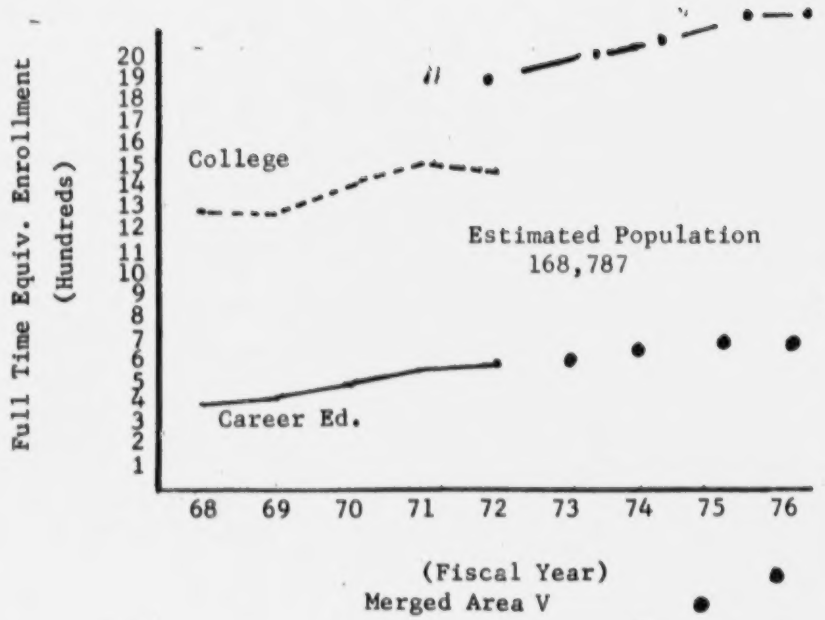


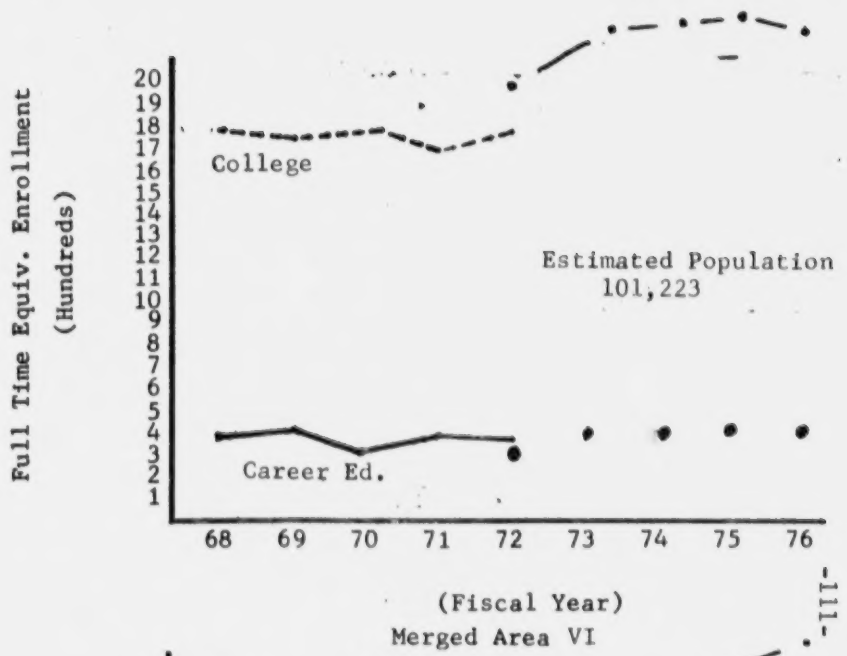
GRAPH 16

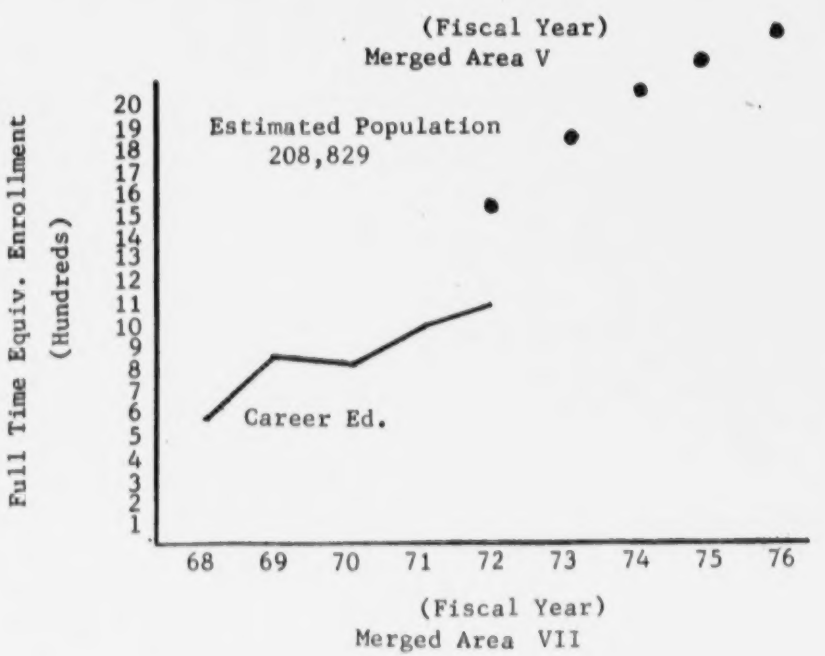
ACTUAL AND PROJECTED ENROLLMENT TRENDS IN IOWA'S AREA COMMUNITY COLLEGES & AREA VOC.-TECH. SCHOOLS

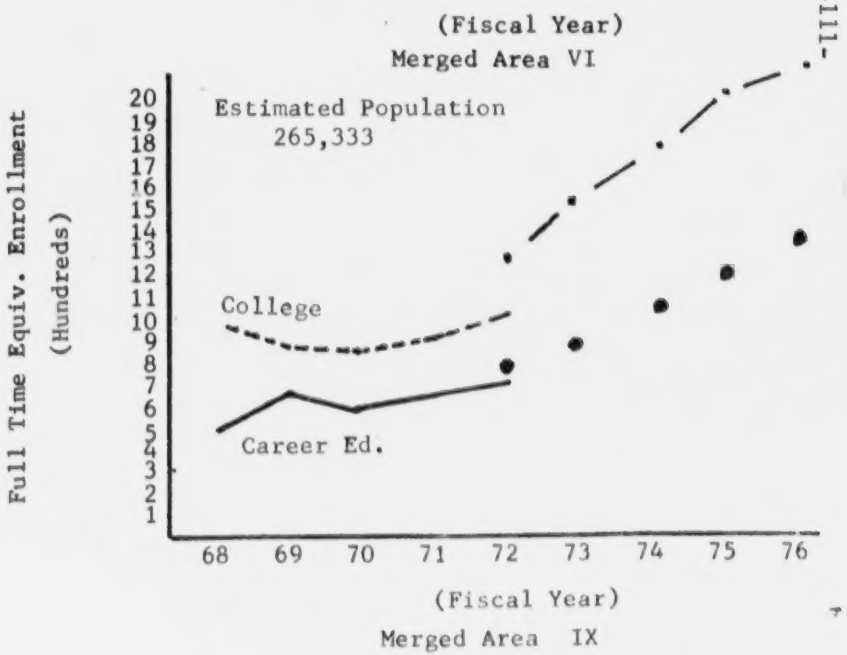
(Page 1 of 4)

See page 4 of 4 for legend









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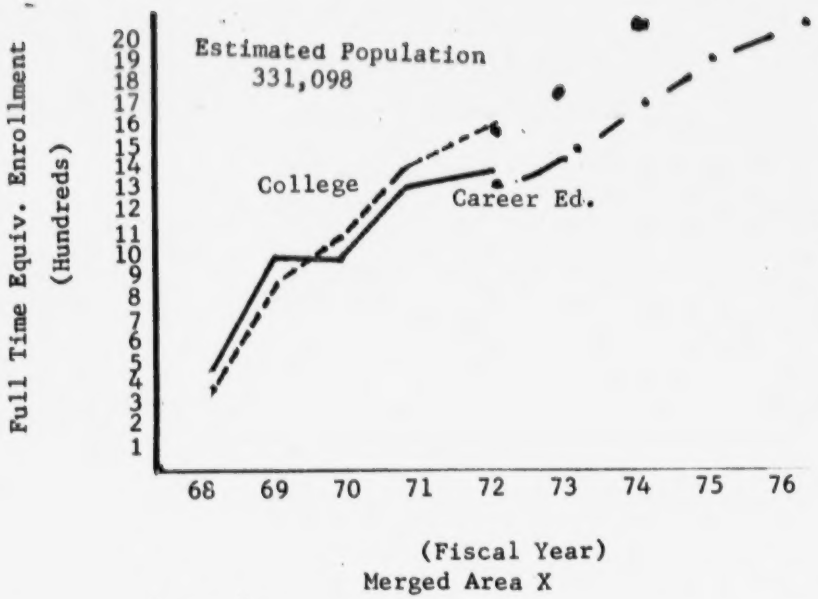

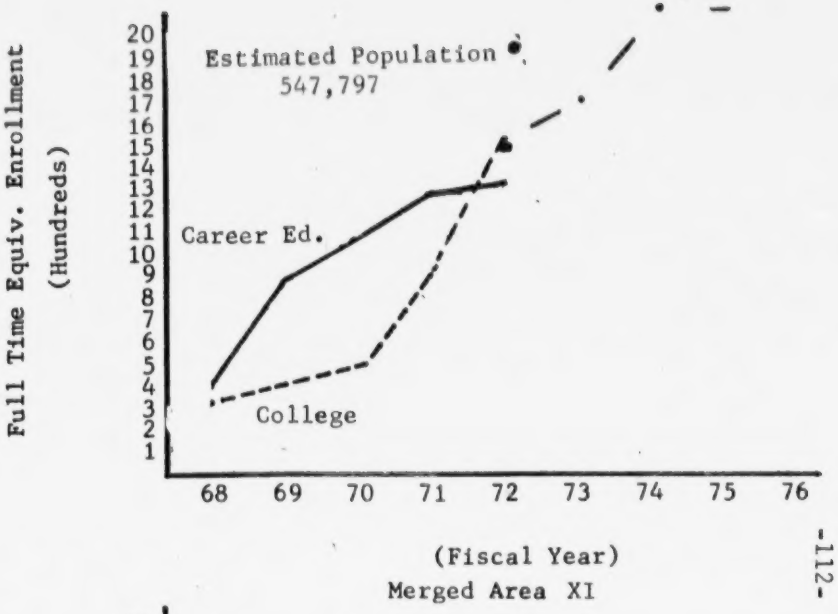

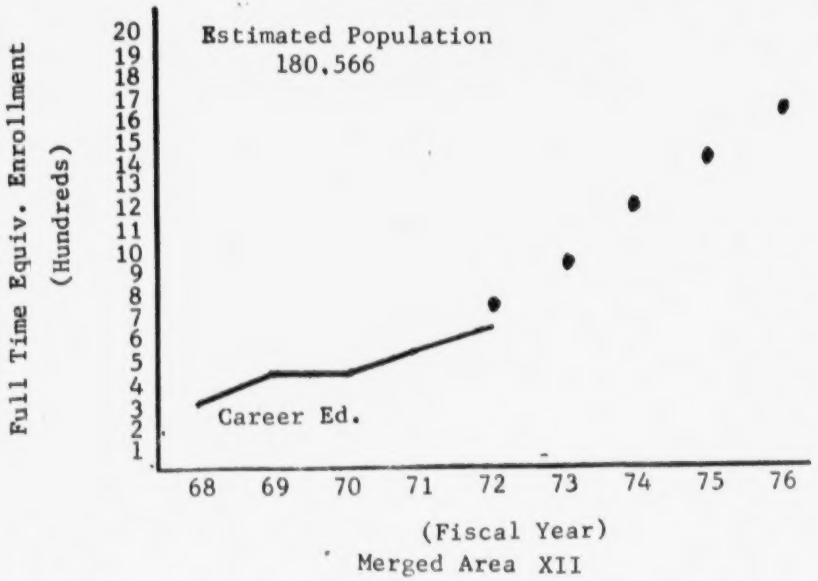

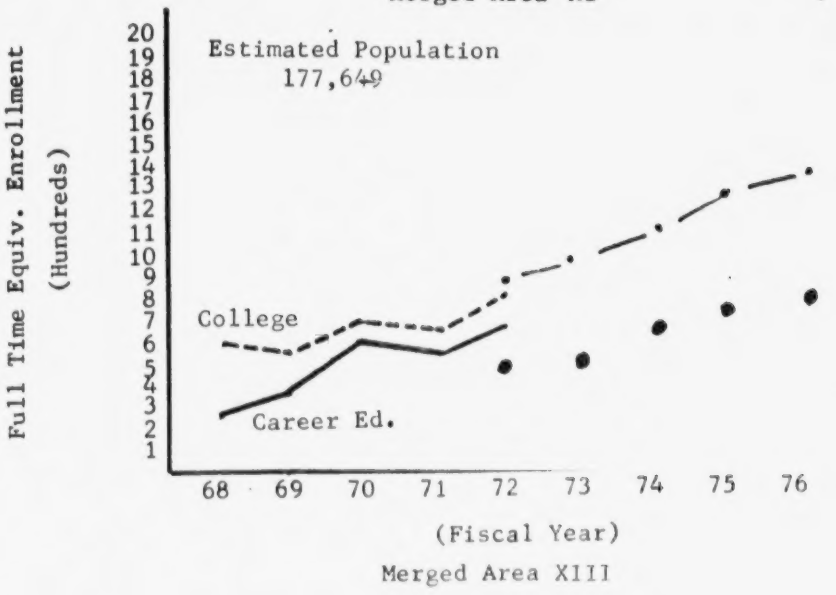

ACTUAL AND PROJECTED ENROLLMENT TRENDS IN IOWA'S AREA COMMUNITY COLLEGES & AREA VOC.-TECH. SCHOOLS

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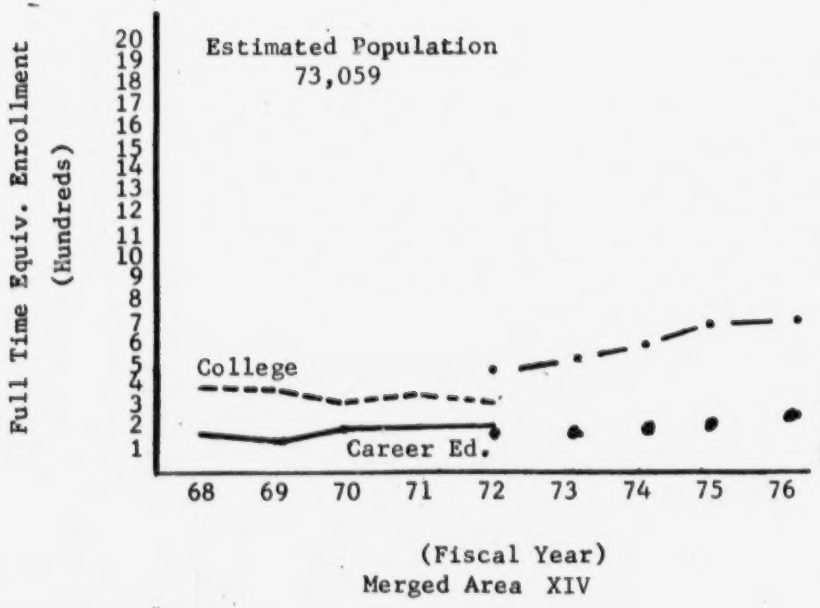
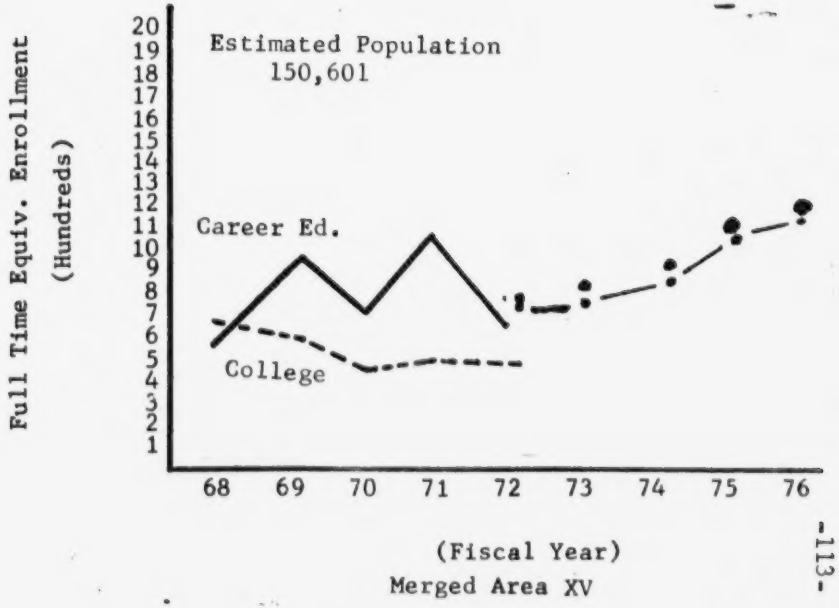
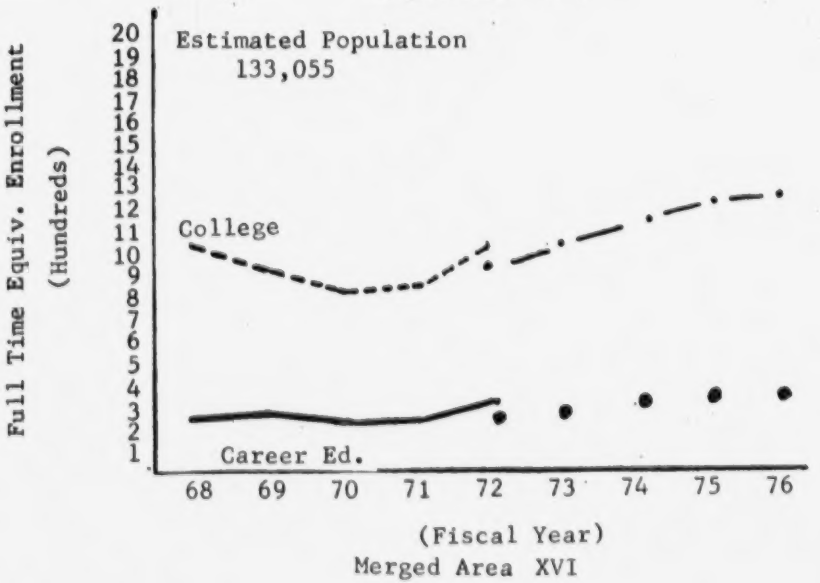






ACTUAL ENROLLMENTS
from Department of Public Instruction Records

—— CAREER EDUCATION

---- COLLEGE PARALLEL

Information from D.P.I.

PROJECTED ENROLLMENT
Information from M.R.I. Report
and Enrollment Projection Study

.--. COLLEGE PARALLEL

.... CAREER EDUCATION

Graph by Iowa Career Education Advisory Council

ACTUAL AND PROJECTED ENROLLMENT TRENDS IN IOWA'S AREA COMMUNITY COLLEGES & AREA VOC.-TECH. SCHOOLS

colleges enrollment differences between arts and science students and vocational technical students would continue in the eleven community colleges in the State. Area XI would experience a larger college transfer enrollment than vocational-technical enrollment beginning in 1972. (15) In all cases, it was projected that total community college enrollments would increase, by institution through 1976. Attention should be called to a comparison between actual enrollment in fiscal year 1972 and the projected enrollment in that year. In the case of area community colleges II, III, V, VI, IX, XIV, and XV, the arts and science enrollments did not reach the expected level. In five of the seven above area community colleges, there appears to be a downward trend in college transfer enrollments. The remaining four of the eleven area community colleges experienced enrollment increases equal to or slightly greater than those projected by MRI. Those schools that exceeded the projected increase did not do so to any significant degree.

The projection of enrollment in vocational-technical programs offered by area schools (both area vocational schools and area community colleges) on a state-wide basis generally shows a gradual increase in all institutions except area schools I, VII, X, XI, and XII. It was projected that these institutions would experience significant increases in their vocational-technical enrollment. The actual enrollment in three of the six institutions (I, VII, XI) did not materialize as expected in the 1971-72 school year. Generally, the enrollment trends for vocational and technical programs appear to be more accurate than those for the college

transfer programs. There is no evidence that there was any effort expended in the MRI report to identify the effect of the establishment of occupationally oriented college transfer programs that would prepare individuals for employment after two years of schooling. Presently, data is not available on the extent to which these programs exist and the number of students enrolled in them.

Late in 1969, Thomas Wolff Associates completed a study under contract with the Iowa Higher Education Facilities Commission, entitled A PROFILE OF IOWA COLLEGE AND HIGH SCHOOL STUDENTS. (25) The methodology of the study included sending questionnaires to a broad sampling of high school students, college students, and obtaining detailed information from administrators of Iowa Regents Institutions, private colleges, and area schools. Data was also collected from other sources. (25) While this study is three years old at the time this report is being prepared, its results identify some implications that may have intensified with the time lapse. The study of post secondary enrollment plans of secondary students revealed that about 21 per cent of the tenth, eleventh and twelfth grade students, included in the study sample, plan to pursue study in a vocational and technical program at the post secondary level. Eight per cent plan to learn skills and technical knowledge at an area school, while 13 per cent plan to study at private vocational technical schools. (25-2)

In accounting for this comparatively large group who plan to attend privately-operated business or trade schools, the fact that such

large numbers of girls want to enter clerical or stenographic work (10.2 per cent of the entire student sample) and cosmetology (2.4 per cent) is a consideration. The promotional job done by business, cosmetology and electronics and other proprietary schools may be the factor for this high level of interest. (25-84)

With respect to this study, it is interesting to note that 52 per cent of the high school students plan to pursue four years of liberal studies, while only 45 per cent actually enter that type of college program. The actual extent to which high school students complete a four-year college degree is much smaller. Thomas Wolff reports that only 28 per cent of Iowa high school students earn a Bachelor's Degree. (25-3)

Students interests in fields of study lean toward the fields in which they have had the greatest exposure. Twenty-nine per cent of the college students major in the natural sciences, while 41 per cent major in the social sciences. This is verified by statements students have made during Council field visits. Two typical statements on this subject are:

> Many teachers are still limiting their career suggestions toward the field of teaching. The students recognized that most teachers have a limited background about the world of work, because of their heavy emphasis on academic subjects in college. (34)

> Many guidance counselors are assigned quantities of menial work, such as checking attendance, handling discipline problems, and the like, instead of providing time and holding the counselor responsible for assisting teachers with the dissemination of occupational information, while providing instruction in the basic skills. (34)

There appears to be a trend in which future generations of youth may not be as inclined toward seeking a bachelor degree as has been true of past generations. A recent article in the Des Moines Tribune stated

that:

> "Sixty-three per cent of the youngsters think it is wiser to step into a well-paying job around the corner than go chasing a pot of gold that may never materialize. Fifty-five per cent believe that industrial pension plans, paid vacations, health insurance and various other benefits offered in the more common, everyday jobs make looking for something adventurously silly".

The full text of the article may be found in Exhibit 1.

Another factor to be considered when making projections for enrollment and program expansion is the birth rate of the state. In April of 1972, the Planning Department of Kirkwood Community College in Cedar Rapids released the results of an enrollment projection, based on live births. This projection predicted a decline of enrollments in institutions of higher education in the State, because of a reduction in the birth rate. The reduction in birth rate was attributed to the Pill. Recently, radio and television stations have been airing public service announcements encouraging family planning. This may also be a contributing factor to reduction of the birth rate in Iowa. The Kirkwood projections may be found in Graph 17.

While a declining birth rate may cause area school administrators some concern, studies (reports by MRI, and Thomas Wolff Associates) and public attitude indicate that students are exhibiting increasing interest in pursuing their post secondary education in area schools. The magnitude of this interest, however, does not appear to be as great as projected by Midwest Research Institute. Students' statements to Council members and the results of a study by Youth Research Institute, (Exhibit 1) as reported in the Des Moines Tribune, indicate that Iowa may be

THE TEEN VIEW

Des Moines Tribune Page 17
Thurs., Mar. 9, 1972

Youngsters Look for Security, Not Glamour

By Lester Rand
(Youth Research Institute)

Glamorous jobs don't seem to have the same old magnetism.

Young people aren't satisfied to be second rate for a long time, learning their craft while waiting for a break. Today they want to hit the big time right off the bat, and if they can't do that they'd rather try the local machine shop, assembly line or bookkeeping department.

Many reason that if they haven't arrived or flashed considerable promise by the time they're 16 or 17 they might as well settle for a more conventional life style.

Now young people marry early and find security a beguiling prospect. College is also siphoning off a large number of would-be actors, models, singers, artists, writers and athletes.

By the time a young man or woman has logged four years or more of higher learning they're ready to step into a secure, well-paying job. Diplomas don't mean too much in the glamorous fields where specific types and styles are generally sought.

Teens pointed out that leaving home is a costly proposition these days. They noted that one had to have a substantial bankroll to cope with the high cost of living while looking for a job in front of a camera, on the stage or in a large advertising agency.

Meanwhile, boys aren't overly enthusiastic about following in the footsteps of professional athletes who have struck gold.

From the looks of things baseball scouts are really going to have to earn their money if they expect to pick up major-leaguers around the countryside. Any boy will succumb to a whopping bonus — say $100,000 for signing up — but not too many lads seem interested in professional ball unless they can make it big.

No wonder professional ball club owners are decrying the dearth of talent. Kids know what they want.

Four out of five boys and girls say they have at one time or another envisioned themselves as automobile racers, airline pilots, globe-trotting journalists, movie stars, literary figures, popular singers, private detectives, announcers, painters and the like.

But despite these yearnings and hopes, very few ever expect to follow through. Less than 7 per cent thought they might eventually take a fling at these uncertain pursuits.

Opportunities in industry, educaton, medicine, technology, etc., are the primary deterrents to reaching for a star. And the recession has hit glamour employment particularly hard.

Sixty-three per cent of the youngsters think it is wiser to step into a well-paying job around the corner than go chasing a pot of gold that may never materialize. Fifty-five per cent believe that industrial pension plans, paid vacations, health insurance and various other benefits offered in the more common, everyday jobs make looking for something adventurous silly.

STATE TOURNAMENT VISITORS COMMENT

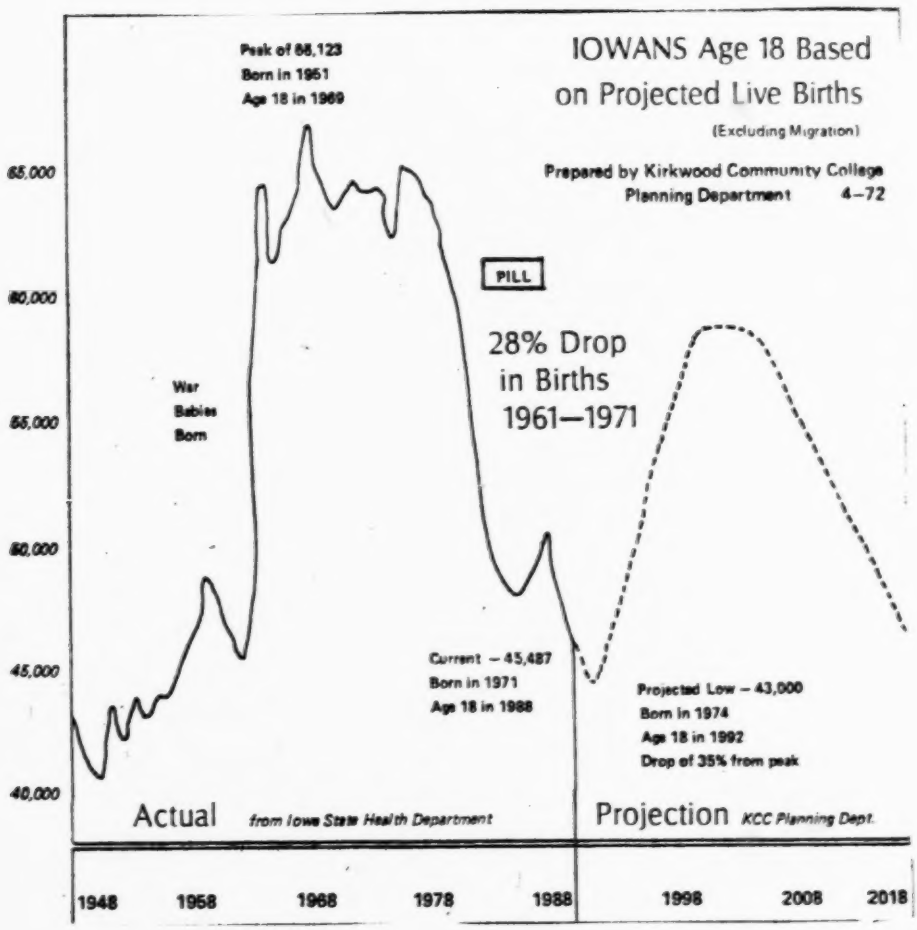
TODAY'S QUESTION: IS A GLAMOUR JOB YOUR GOAL, OR IS PRACTICAL SECURITY YOUR AIM?

Ronnie Hokinson, 14, Barnum — "I am not interested in a glamour job, because I don't like being in front of groups of people. I would rather be in competition, in sports or some kind of motorcycle racing, but I'll probably be a farmer. I'd like to be a farmer. I was raised on a farm and I like driving things like tractors, but I don't like to do chores. I like being outdoors. I wouldn't like living in a big or little city because there is no room to mess around."

Peg Strum, 18, Roland — "Practical security is the only thing that has entered my mind. All I have ever thought about is getting a good paying job to live on. Glamour jobs might be more fun, but if you find something worthwhile and good paying there's no need for having a job that satisfies the ego for a little while. To me, a glamour job is a flakey movie star batting her eyebrows. It also doesn't have a steady income. There's no worry in a secure job."

Ines Burriola, 19, Des Moines — "For myself, I don't really feel I need a glamour job. Any job would be fine as long as I could support myself. And if I had a family, I would like a job that would pay enough so that I could support them. I don't think that a glamour job is really the best idea to assure a secure future as far as I as concerned."

Annette Lenz, 14, Manson — "I think I would rather have a regular job. I suppose because I like simple things and a slower moving life. I would like to have a ranch or farm with animals because too many people just go around hurting animals and not thinking that it matters, but it really does much more than they can even know. Animals never hurt you unless they have a reason and people always do. This would be secure because people will always need animals even though they may not know it."



GRAPH 17

Taken from the Des Moines Register

Dated 5/21/72

entering an era in which selected community colleges in the state will need to place greater emphasis upon vocational and technical education, in order to meet the needs of the students the institution was designed to serve.

As reported earlier, in the State Plan Overview, State funding of vocational and technical programs has remained almost static since the passage of the area school bill in 1965. This trend may inhibit implementation of programs designed to meet the needs of youth and adults in the state. Currently, some legislators and state administrators are discussing the possibility of making appropriations with accountability for performance included as part of the legislation. In order for such legislation to be written, it will be necessary to have accurate planning data on labor market needs and student interests. The data yielded by the Career Education Need Information System Project should provide a valuable assist to area school administrators for planning new programs and adjusting others.

Hopefully, future State Plans will identify, in detail, types of programs which should be established to meet labor market needs and student interests, instead of referring to "new and emerging occupations".

POST SECONDARY STATE-WIDE EFFORT

Enrollment Reporting Systems - Currently, the Department of Public Instruction collects enrollment data from area schools in two different forms, to satisfy the needs of the U. S. Office of Education and to use as a basis for reimbursing the area schools from the general aid fund.

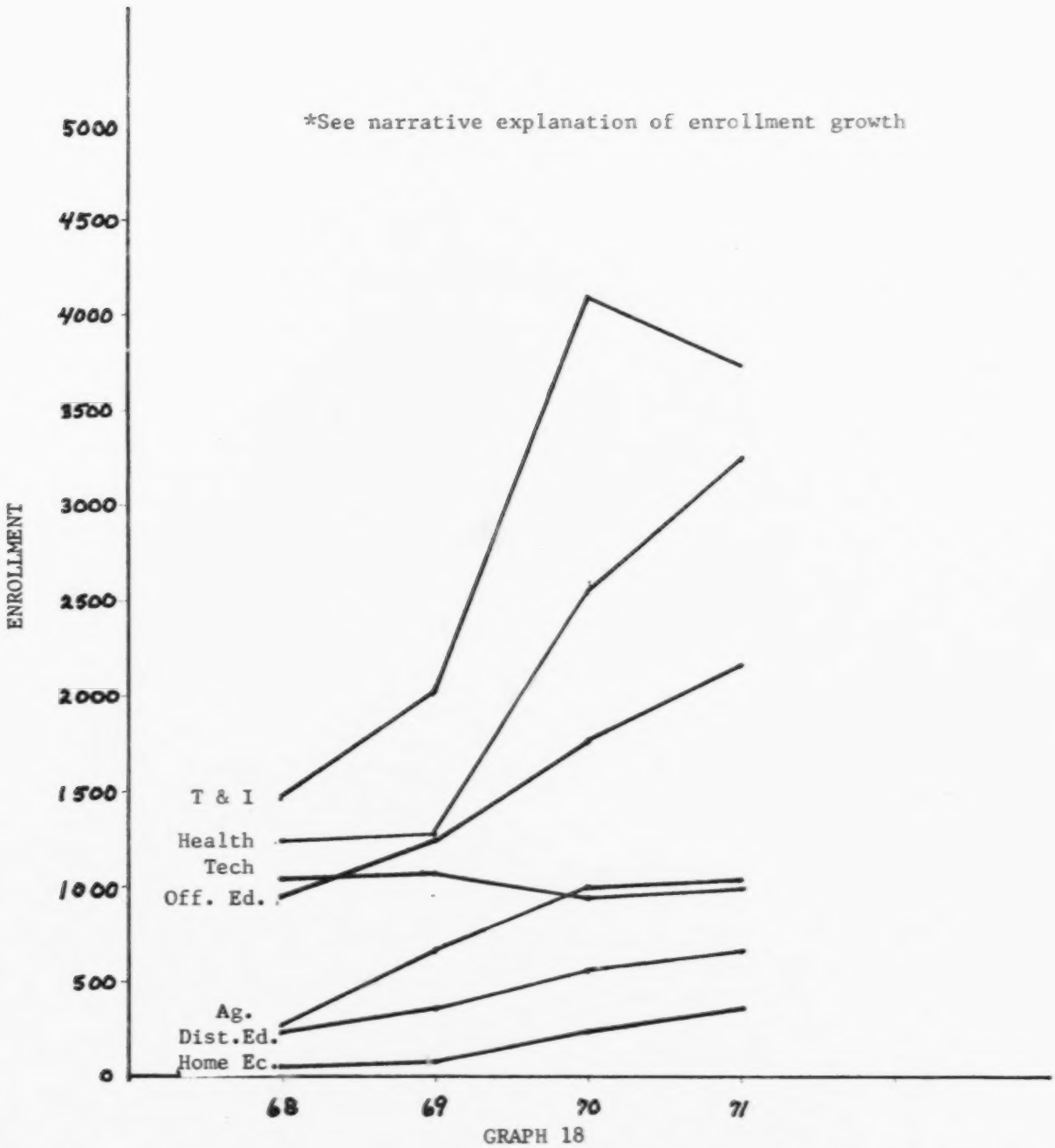
Graph 18 illustrates enrollments as reported to the U. S. Office of Education. This count of students represents the total number of students enrolled in vocational and technical programs during each fiscal year extending from July 1 through June 30. As explained in the secondary school portion of this report, if student A completes his training in a program in September and student B enrolls in the same program in October, the student enrollment count would be two. This method of reporting has the advantage of showing the number of residents in the state who were served in any given year. It has the disadvantage of duplicate reporting of training stations filled in the program when the length is greater than one year. A further discussion of the implications of the enrollment trends will appear later.

Area schools report their enrollments quarterly to the Area Schools Division of the Department of Public Instruction. These reports reflect the unduplicated count of the number of training stations filled in vocational and technical education programs during the year, based on full-time equivalent enrollment. If student A leaves a program during a given quarter and is replaced by student B, the enrollment count is one.

TOTAL ENROLLMENT

5,234 6,662 11,107* 13,584*

*See narrative explanation of enrollment growth



GRAPH 18

STUDENT ENROLLMENTS IN POST SECONDARY VOCATIONAL-TECHNICAL PROGRAMS

Source - Annual Reports for Career Education - FY 68, 69, 70, 71

Graph by Iowa Career Education Advisory Council

Table 3 reports the grand total student enrollment in the fall term of 1971, while Graph 19 identifies enrollment trends during the fall term for the last four school years. A review of these charts will follow:

Enrollment Trends - Area school enrollments, as illustrated in Graph 18, are increasing the vocational fields of health occupations, office education, distributive education and home economics during school year 1970-71. Enrollment in technical occupations and agriculture have plateaued while the enrollment in trade and industrial occupations has declined slightly.

The reader should be aware that the enrollment growth between fiscal year 1969 and 1970 was not as great as Graph 18 would indicate. The deviation is due to a change in the student accounting system. During fiscal year 1969, and prior years, the enrollment count was based on the number of training stations filled throughout the majority of the year by a single student. From fiscal year 1970 through the present, the enrollment count is based on the number of persons that have been enrolled in the training program during the year, regardless of whether the student was enrolled during the entire year.

A more reliable measure of state-wide enrollment trends would be the fall term enrollments in area schools. Graph 19 shows that the vocational and technical enrollments in area schools have grown from 5,939 in the 1968-69 school year to 9,134 in the 1971-72 school year.

Specific area school enrollments present a divergent picture, when compared to state-wide statistics. The reader should refer to a

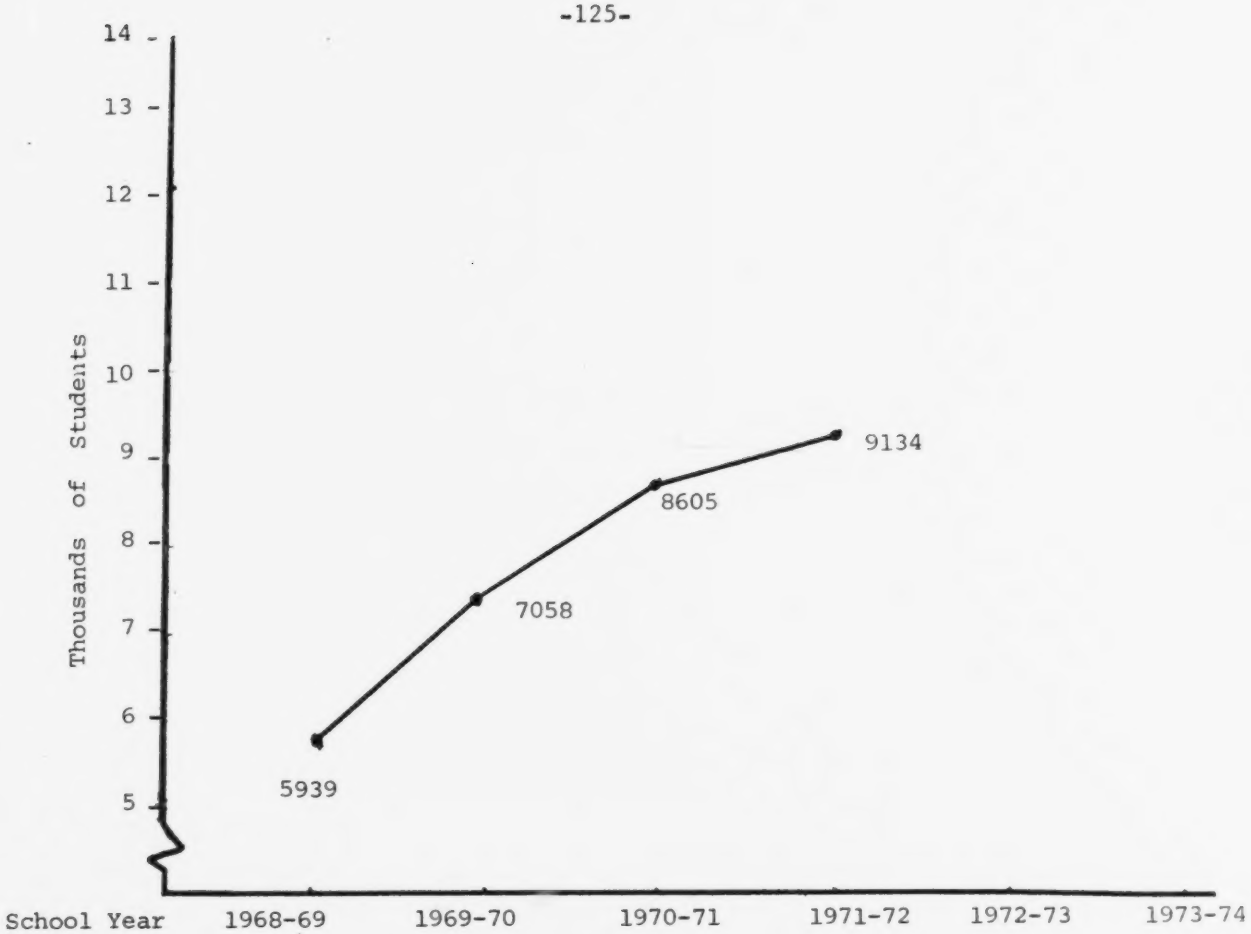
	Agriculture	Distributive Education	Health Occupations	Home Economics	Office Education	Technical	Trade & Industrial	Totals by Area Schools
Taxonomy No.	01	04	07	09	14	16	17	
Area I	90	10	76	12	107	20	170	485
Area II	57	31	118		45	65	66	382
Area III	89	12	42		48		64	255
Area IV	24				56	10	289	379
Area V	35	136	142		87	30	119	549
Area VI	15	122	53		32	46	36	304
Area VII	153		135	82	44	124	532	1070
Area IX	60		202	26	116	97	204	705
Area X	210	132	320		399	100	161	1322
Area XI	59	82	333	25	298	74	428	1299
Area XII	56		113		109	82	286	646
Area XIII	55		187	15	88	75	182	602
Area XIV			20		25	39	80	164
Area XV	39		102		129	53	287	610
Area XVI			110		85	49	76	320
Totals by Occupational Area	942	525	1953	160	1668	864	2980	9092 Grand Total

Table 3

NUMBER OF STUDENTS ENROLLED
IN
OCCUPATIONAL CATEGORIES BY AREA SCHOOL DURING THE FALL TERM, 1971

Data From: Iowa Department of Public Instruction
Fall Term Enrollment Dec. 6, 1971

Chart by Iowa Career Education Advisory Council



Graph 19

POST SECONDARY VOCATIONAL & TECHNICAL ENROLLMENT TRENDS

Data From: Iowa Department of Public Instruction
(Fall Term Enrollments - FTEE)

Graph by Iowa Career Education Advisory Council

series of graphs contained in Graph 16, pages 1 through 4. Merged Areas II, III, V, VI, IX, XI, XIII, XIV, XV, and XVI, all assumed responsibility for operation of one or more existing long-established junior colleges. In the case of merged areas IX, XI, XIII, XIV, and XV, the enrollments in vocational-technical programs are approaching a point where the number is nearly equal or slightly exceeds the enrollment in the arts and science college transfer program. The enrollment difference between areas II, III, V, VI, and XVI have essentially stayed the same in the five fiscal year period from 1968 through 1972. Area X functions as a community college, however, the college transfer program was implemented after the area school was organized and the comparative enrollment growth between arts and science students and vocational-technical students has been nearly equal. These selected area community colleges are enrolling more students in vocational-technical programs than they did as junior colleges, however, in five of these schools, signif'cantly larger numbers of students are enrolled in arts and science programs than in vocational and technical programs. Area schools I, IV, VII, and XII function as vocational-technical schools and their entire student body is enrolled in this type of program.

Representative Edith Green of Oregon, who was one of the designers of the recently passed Public Law 92-318, Amendment to the Higher Education Act of 1965, recently state that the "...national mania (for college degrees) may produce the most scholarly unemployment line in the world". She further reports that, "...a Labor Department study...concludes that less than 20 per cent of the jobs in the next ten years will

require four years of college education." Finally, she states that "Higher education has been way over-emphasized. The greater needs now appear to be in vocational and technical training...at community colleges and the like". The full report of her comments may be found in Exhibit 2. By reviewing the portion of this report pertaining to Guidance and Counseling, one will observe that, based on reports of fiscal year 1971, area schools should improve their efforts at following-up their arts and science students. It becomes apparent that, without viable student follow-up information on all students, area school administrators will not have the management information necessary to effectively implement Public Law 92-318.

Table 3 identifies the area school enrollments during the fall term of 1971 by seven program clusters and by area school. It should be observed that the largest enrollments in area schools occur in the occupational fields of health occupations, office education, and trade and industrial education. Smaller enrollments are evident in technical education, distributive education, and agriculture education. The smallest enrollment occurs in home economics-related occupations. When comparing these enrollments with projected labor demands, as identified in Graph 3, Chapter II, one may conclude that program expansion should be placed in the office education and health occupations areas. There is apparently great need for workers prepared to work in clerical and kindred jobs. By referring to Graph 1, Chapter II, one finds that,irregardless of the apparently large output of office education workers by area and local schools, the state is meeting only 15 per cent of the projected need.

8-18-72 Tribune

Rakes 'National Mania' For College Degrees

By Bill Robertson

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WASHINGTON, D.C. — One of the architects of the U.S. system of higher education, Representative Edith Green (Dem., Ore.), now thinks the "national mania" for college degrees may produce "the most scholarly unemployment line in the world."

In several respects, she suggests, the nation's higher education system is "out of control." What's more, recent congressional actions will make matters worse before they improve, she believes.

The higher education system, she says, has assumed "degree mill" proportions, and degrees are not producing desired results.

"We have all been reading in recent months of the numerous PhD's swelling the unemployment ranks," Mrs. Green said recently.

Vocational Training

"I suggest that it is well past time we re-examine the national mania for bachelors and masters and doctoral degrees.

"It is my guess that millions of young people in college now are not there because they genuinely want to be, but because they and their parents have, in good faith, accepted the dictum that there is more prestige and greater economic benefits for college graduates than non-college graduates."

Mrs. Green cites a Labor Department study which concludes that less than 20 per cent of the jobs in the next 10 years will require four years of college education. The remainder can be filled by high school graduates and post-graduates with vocational or technical training.

"It is my belief," she adds, "that if we, as a nation, persist in downgrading vocational and technical training and, at the same time, continue this slavish bondage to academic degrees, we may end up with the most scholarly unemployment lines in the world, filled by unhappy men and women who, had they but known the truth, would have originally chosen vocations in which they would now find themselves happily employed."

Overextended

The alleged "degree mill" nature of colleges and universities apparently is something that has developed in the last decade, when the number of college graduates in the labor force increased by about 50 per cent.

Ironically, the increase must be attributed, in part, to the efforts of Mrs. Green who, as chairman of the House Special Subcommittee on Education, has been one of higher education's most successful advocates in Congress for years.

Yet, in coming weeks, Mrs. Green intends to go before the House Appropriations Committee and try to discourage federal spending for a variety of major, new higher education programs.

"I think it is clear now," she explains, "that we have overextended ourselves badly . . . in terms of finances, the promises we make, and the results we get."

"The harsh truth is there simply are not jobs for the young people we are running through the degree mill," she asserts.

"Higher education has been way overemphasized. The greater needs now appear to be in vocational and technical training . . . at community colleges and the like."

To change education's emphasis, Mrs. Green adds, will require some careful fiscal balancing. Higher education cannot be totally dropped from the federal assistance scheme.

"It is not in the best interests of the country to turn the (financial) faucet off entirely," she says. "But I am very much opposed to expanding schools further at the moment."

Exhibit 2

It was estimated that the private secretarial schools in the state enroll approximately 2,500 students annually. (44) Both private and public training programs at the post secondary level have in training approximately 4,200 persons each year. Total secondary school effort is not readily identifiable when also considering non-reimbursed programs. Considering the potential output of both public and private schools at the post secondary level, it appears that those sources are training approximately one-half of the number of workers needed annually, as predicted in Graph 3, Chapter II.

Large numbers of health occupations job classifications may be found in the broad categories of service workers and professional technical and kindred workers. Graph 1, Chapter II, however, shows that training output, compared to state-wide need for workers in this classification, is projected to be 50 per cent for the year under review. This output ranks second for all occupational groups offered in the state. It should be noted that all reimbursed vocational health occupations training in Iowa, for occupations requiring less than a B.A. Degree, is conducted in area schools at the post secondary level.

Large efforts are being expended by area schools in preparing persons for employment in trade and industrial occupations. Job classifications for workers in this occupational grouping may be found in the Department of Labor Classifications of Service Workers and Craftsmen and Kindred Workers. When comparing the projected output with state-wide needs, (Graph 1), it is observed that approximately 30 per cent of the

need is projected to be reached.

The preparation of agricultural workers by area schools has been growing in recent years. Many of these occupational programs prepare persons for employment in off-farm agricultural occupations. According to the 1972 State Plan for Career Education, the projected training output amounted to only 24 per cent of the need, even though Graph 2, Chapter II, shows there will be a reduction of need for farm workers. Many agriculture-related employment opportunities are being included in all other job clusters identified by the U. S. Department of Labor.

Training effort in technical education, as reflected by the number of students enrolled, ranks fifth of all occupational groupings in the state. According to State Plan projections, the output of potential workers, compared to employment needs, is the greatest of seven occupational groupings at 73 per cent. In recent years, numerous national professional journals have predicted that there will be increasing need for technical workers. Iowa, according to State Plan projections, may not be experiencing the same need that is reported to be evident at the national level for technicians.

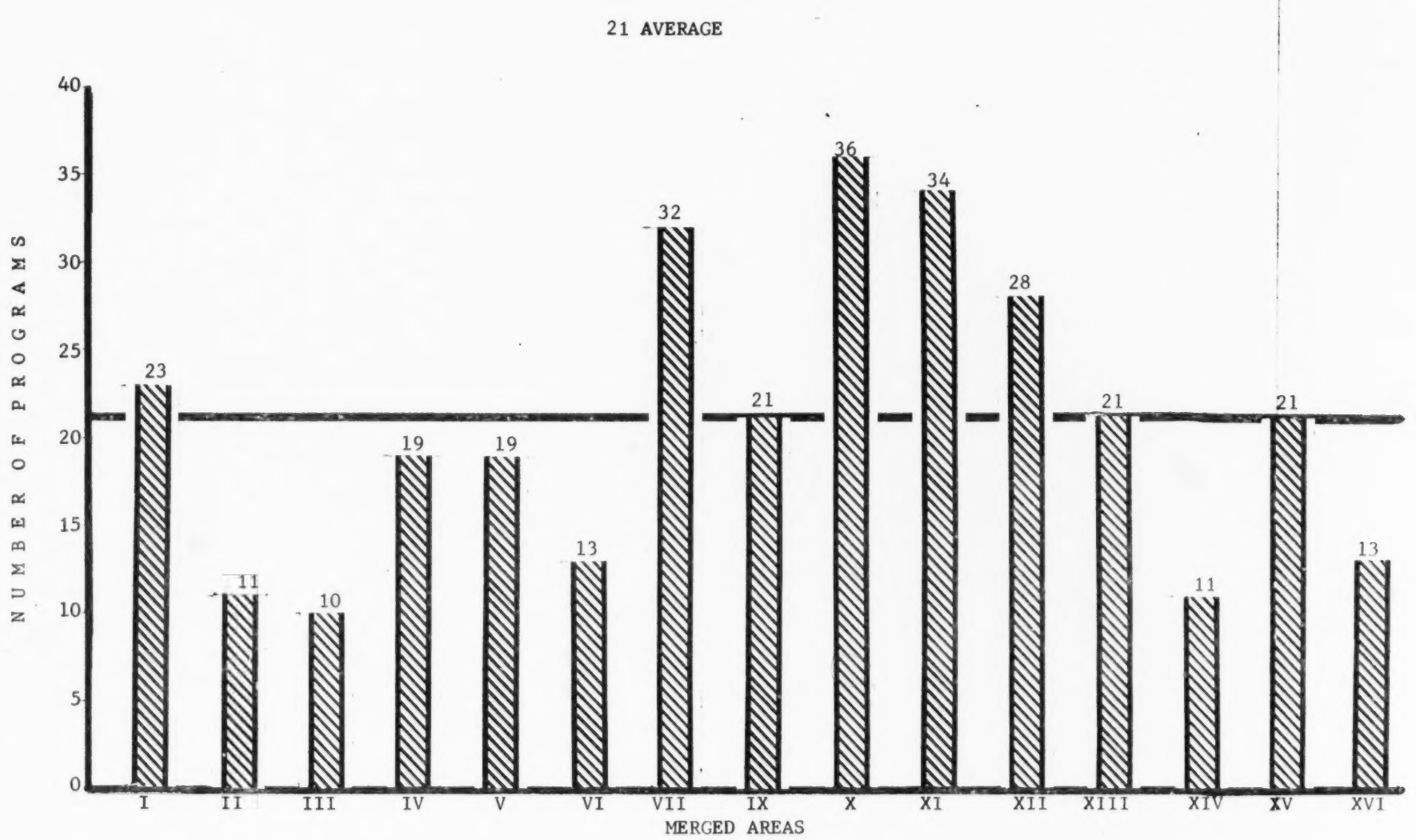
The enrollment of persons in distributive occupations ranks number six of seven occupational groupings. This effort, by area schools, appears to be in balance percentage-wise with total occupational output from the area schools in seven occupational categories, when compared with projected labor market needs found on Graph 2.

The first quarter enrollments reported by the Area School Branch of the Department of Public Instruction are 529 greater than the previous year. As pointed out earlier, the Area School Branch enrollments are

counted differently than the enrollments projected in the State Plan for Career Education, and as reported to the U. S. Office of Education in the Annual Report. Through the process of interpolation, by comparing the area schools enrollments and the U. S. Office of Education reported enrollments for fiscal year 1971 with the area school enrollment for fiscal year 1971 and fiscal year 1972, it appears that the interpolated U. S. Office of Education enrollment for fiscal year 1972 should fall slightly short of the enrollment projected in the State Plan. At the time this report is being prepared, it was projected that the data for the annual report to the U. S. Office of Education would not be tabulated for another two months. For this reason, comparable figures were not available.

Programatic Offering - During the 1971-72 school year, eleven area schools operated as area community colleges and four as area vocational-technical schools on twenty-five campuses across the state. The number of reimbursed and non-reimbursed, State Board approved, vocational-technical programs offered by individual area schools ranged from a low of ten programs to a high of thirty-six programs.

Graph 20 shows that five area schools offered thirteen or fewer approved full-time preparatory vocational-technical programs, while four area schools offered twenty-eight or more vocational programs. Six area schools offered between nineteen and twenty-three vocational-technical programs. Those schools offering the fewest number of vocational-technical programs have smaller populations to serve. Those schools with the largest offering are generally schools with the largest populations. The Area VII



Number of Fulltime Preparatory Vocational & Technical Programs Offered by Area Schools During 1972

Source - Fall term Enrollment for Area Schools 1971-72 School Year, Department of Public Instruction

(FUNDED & UNFUNDED)

Graph by Iowa Career Education Advisory Council

Graph 20

school provides the citizens, within its area, one of the largest numbers of vocational-technical offerings and yet has a smaller population base than two other merged area schools that have a smaller program offering.

Some area community college administrators are becoming increasingly concerned about the need for their institution to provide greater vocational and technical opportunities for the population they are responsible for serving. Those community college administrators in schools that assumed responsibility for the operation of one or more former junior college needed several years to reorient their operation. There were numerous other reasons for lack of effort directed toward implementing new vocational-technical programs in some community colleges. During this same period of time, area schools that did not assume responsibility for operating former junior colleges implemented large numbers of vocational and technical programs.

It is recognized that student interests and abilities vary considerably and, therefore, it seems appropriate that each area school should provide as broad an offering of programs as possible to serve the needs of students in their merged area. It is apparent that each area school could not offer one of each of the programs located elsewhere in the state and that opportunities must remain open for any student in the state to attend any area school. Some students will find it impractical to attend an area school located in another area of the state and, therefore, it seems appropriate to review the breadth of offering of vocational-technical programs in each area school. Primary priority should be given for the use

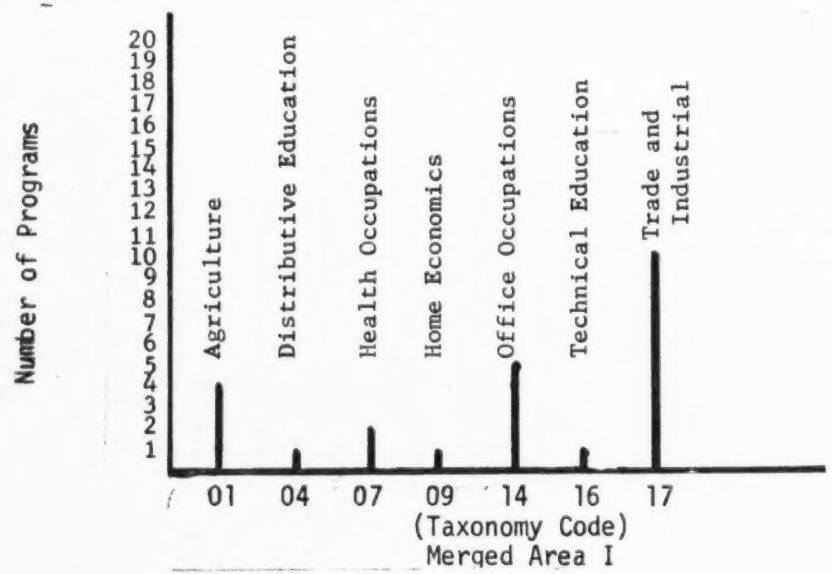
of funds forthcoming from Public Law 92-318 for the establishment of vocational-technical programs in area schools with limited offerings. Second priority should be given to expansion of vocational-technical offerings in schools having numerous programs and third priority should be given to further expansion of arts and science programs.

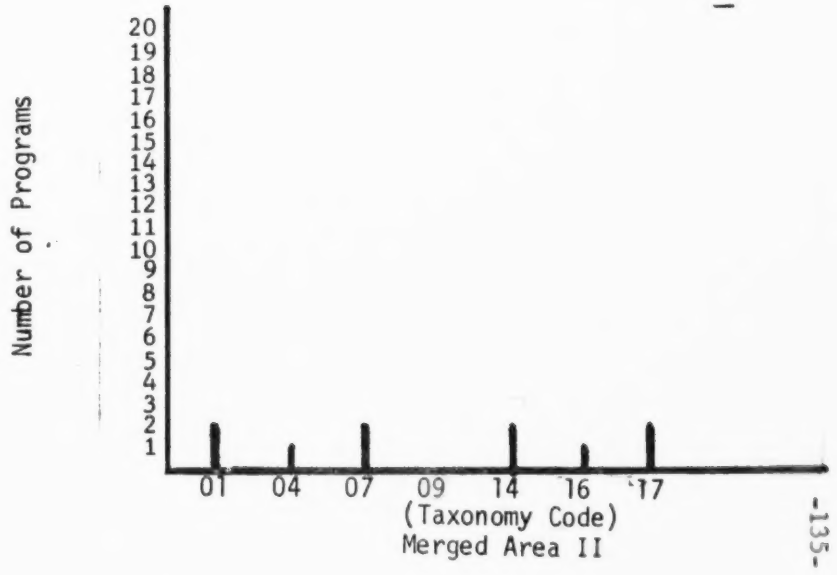
The following analysis will be devoted to full-time preparatory programs contained in the seven occupational groupings identified in Table 3. It is recognized that area schools have operated special needs programs, however, because of limited Council staff time, these programs will be reviewed in a future Annual Report by the Council. The adult education effort of area and local schools will also be reviewed in a future Report by the Council.

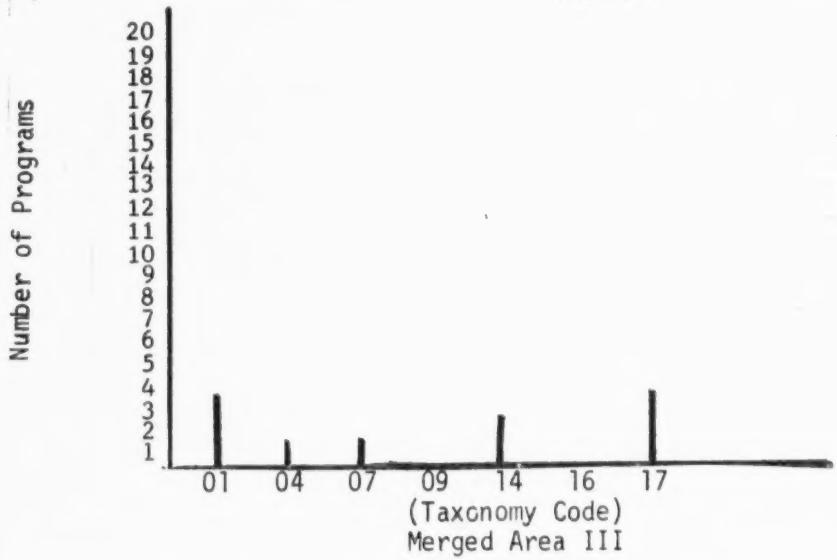
Program Voids - A review of Graph 21 illustrates the number of occupational programs, according to seven categories listed in the State Plan for Career Education, offered by each area school and for the whole state.

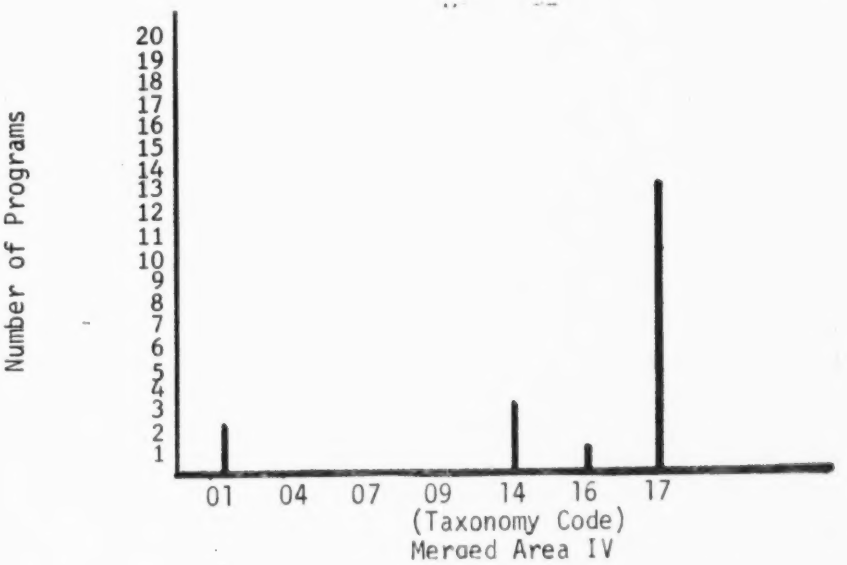
Three area schools offer programs in four of the seven occupational groups. The actual number of programs offered ranges from nineteen in one school to thirteen in another school and eleven in the third. All three of these schools offer no programs in distribution or home economics. One school, also, offers no health occupations programs. Two of the three schools offer no programs in the field of agriculture.

It appears that the three area schools with comparatively limited breadth in their offering (seven occupational clusters) should seriously









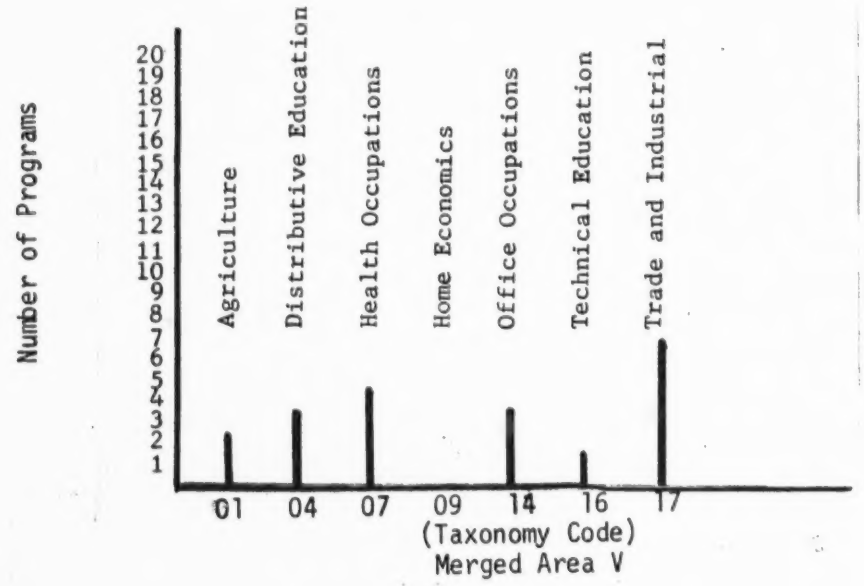
Data from: Fall Term Enrollments, 1971, Department of Public Instruction

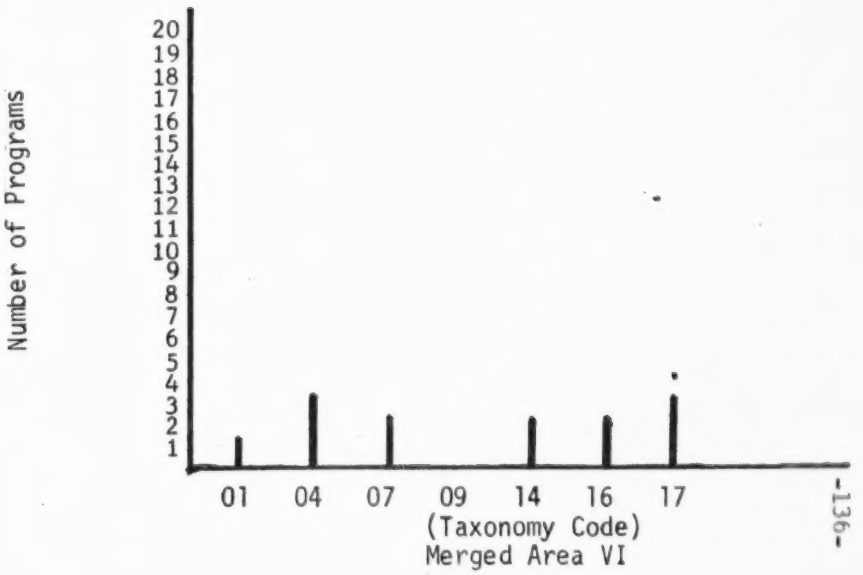
Graph 21

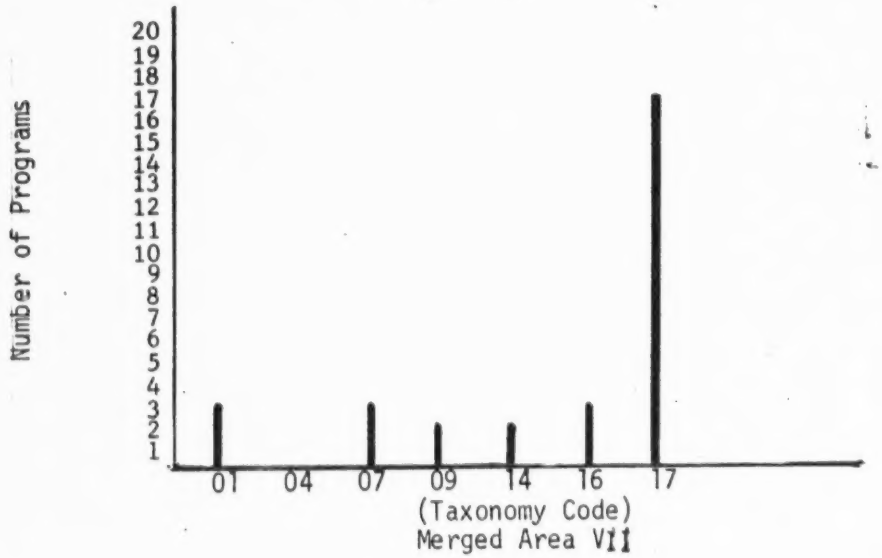
Graph by Iowa Career Education Advisory Council

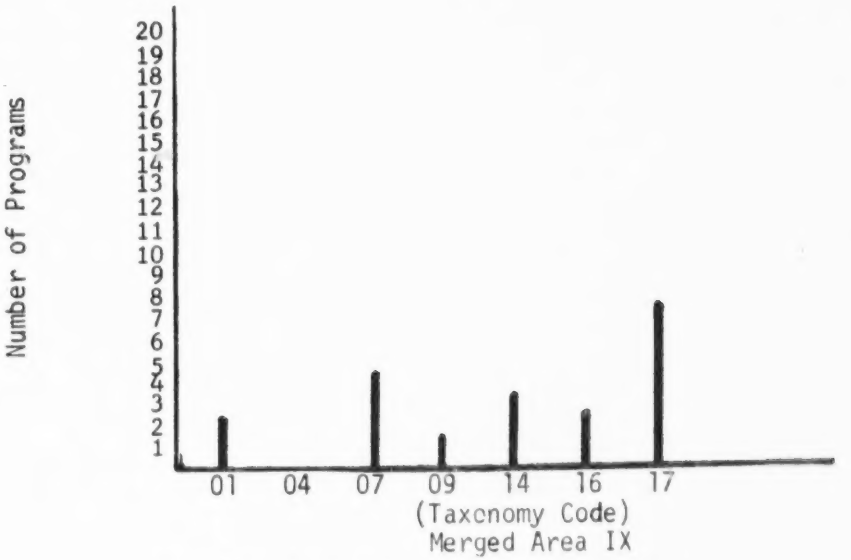
PROGRAMS OFFERED BY AREA SCHOOLS IN SEVEN OCCUPATIONAL CATEGORIES

(Page 1 of 4)



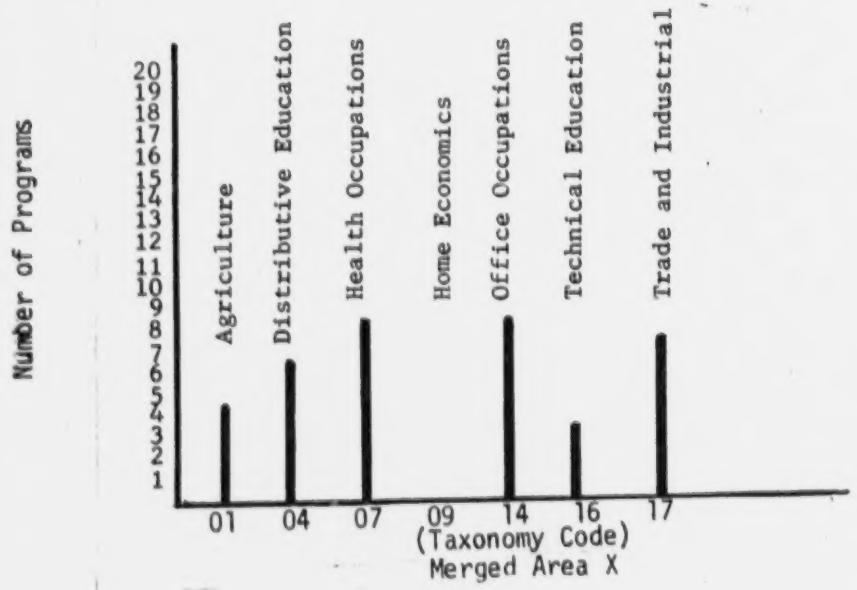


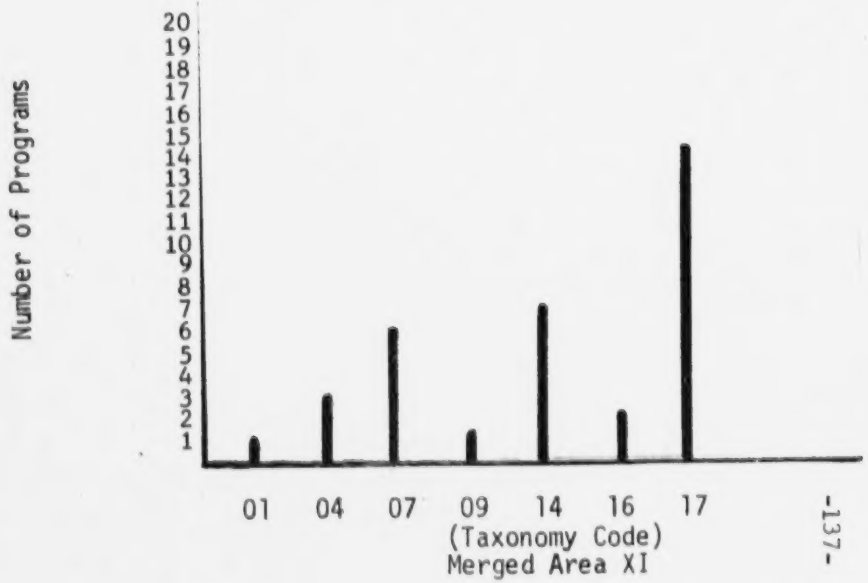


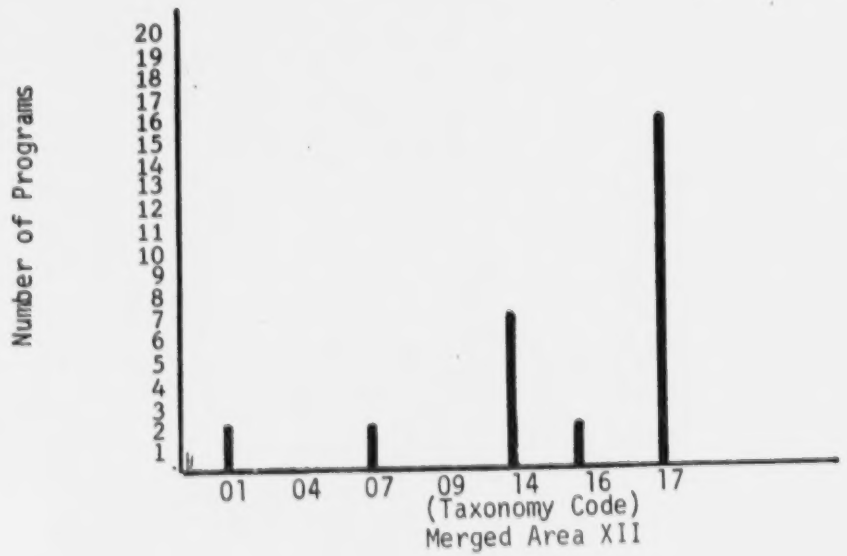


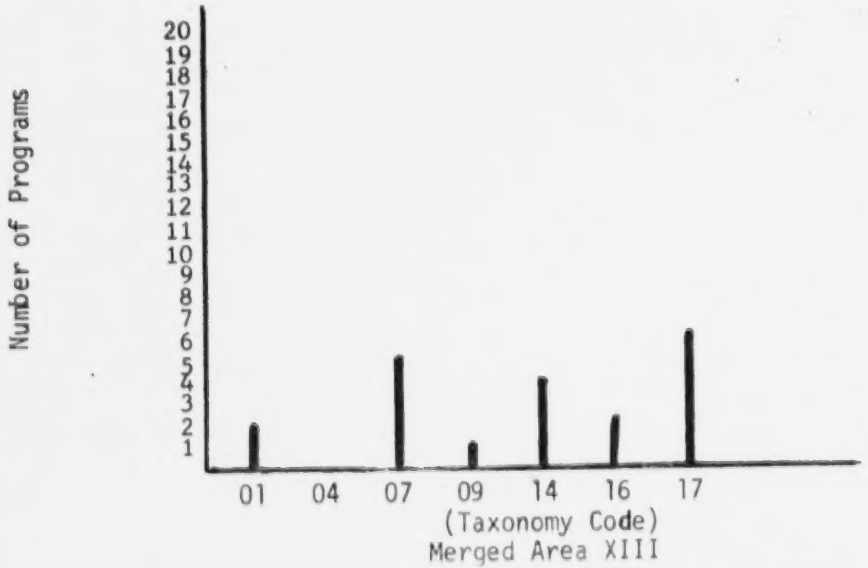
Graph by Iowa Career Education Advisory Council

PROGRAMS OFFERED BY AREA SCHOOLS IN SEVEN OCCUPATIONAL CATEGORIES
(Page 2 of 4)



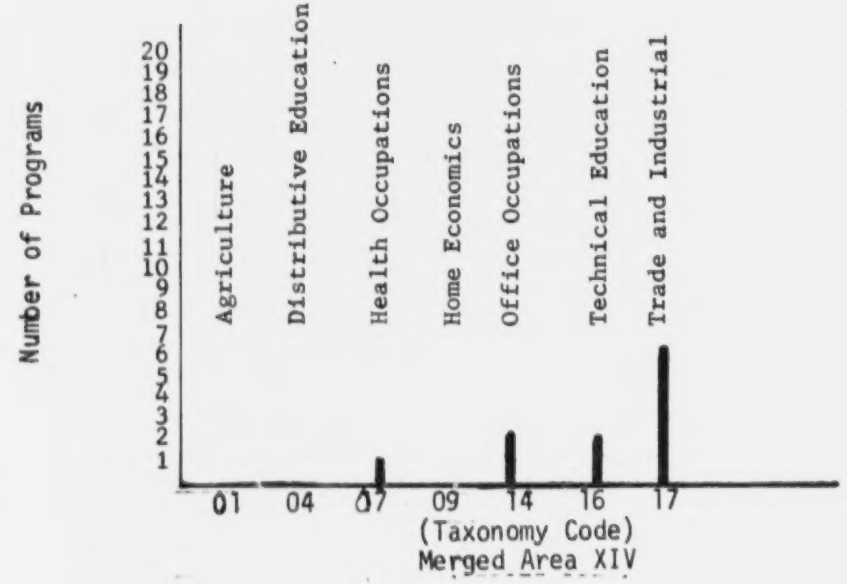


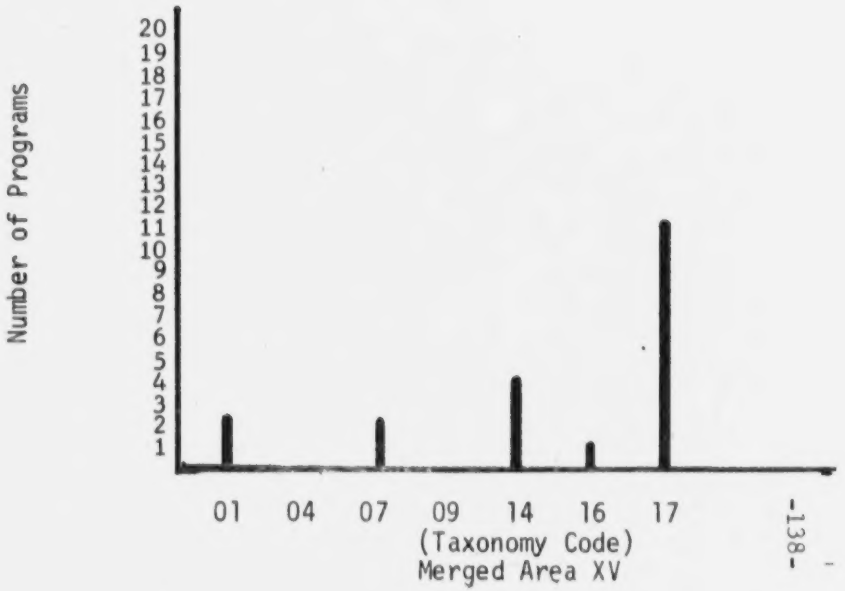


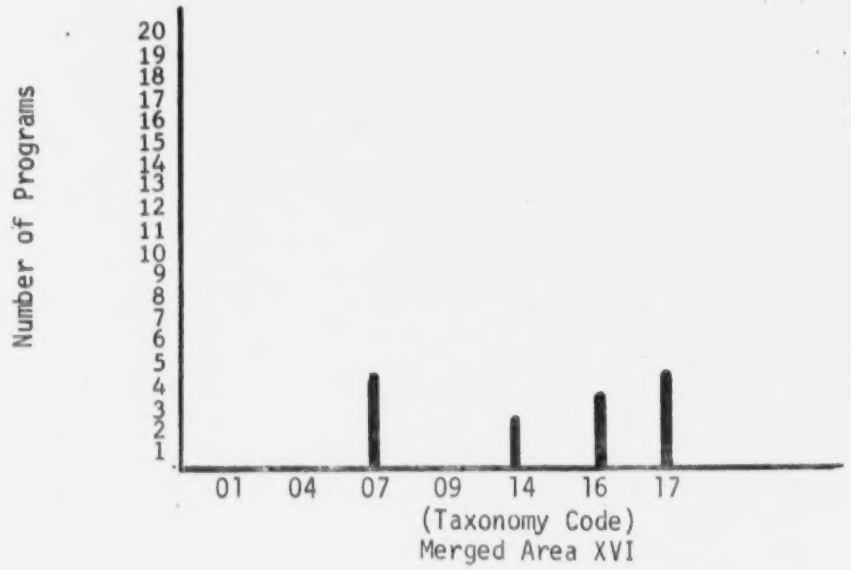


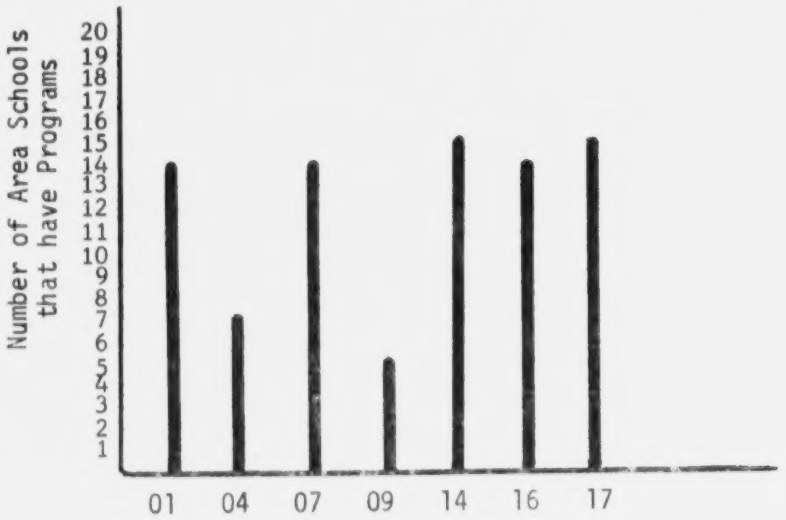
Graph by Iowa Career Education Advisory Council

PROGRAMS OFFERED BY AREA SCHOOLS IN SEVEN OCCUPATIONAL CATEGORIES
(Page 3 of 4)









Graph by Iowa Career Education Advisory Council

PROGRAMS OFFERED BY AREA SCHOOLS IN SEVEN OCCUPATIONAL CATEGORIES

study employment opportunities and student interests in the fields for which voids exist in their institutions. Identification of sufficient needs for programs of this type should precipitate priority implementation of such programs.

Placement records from post secondary home economics-related programs are reviewed earlier in this report. The reader may wish to refer to Graph 11, Chapter IV, to review the placement record of these programs. Consideration should be given to approving home economics-related wage-earning programs that have built in safeguards which will assure the student reasonable opportunities for employment after completion of these programs.

The "State Total Graph" of Graph 21, Chapter V, shows that the majority of area schools offer programs in five of the seven occupational clusters.

New Programs in Fiscal Year 1972 - Mention was made earlier that the State Plan did not identify, specifically, new programs that would be offered in fiscal year 1972, however, the implementation of the labor market needs portion of the CENIS Project, plus the federal development of State Plan guidelines that call for the use of measurable objectives, should rectify this problem in the future. The State Plan did project the implementation of twenty-seven new programs which included:

5 agriculture occupations

7 health occupations

5 office occupations

1 program for the disadvantaged

1 distribution occupations

2 technical occupations

5 trade and industrial occupations

1 program for the handicapped

According to a publication by the Iowa Department of Public Instruction, forty-two new programs were operated for the first time in the 1971-72 school year. (56) These programs included:

13 programs in agriculture (including nine veteran farm programs offered on a part-time basis).

2 programs in distribution

1 program in technical occupations

12 programs in T & I occupations

3 programs in health occupations

5 programs in office occupations

3 programs in home economics occupations

1 program in pre-career for high school students

1 program for the disadvantaged and handicapped

A discussion of area school efforts directed to serve the needs of secondary school students may be found in the secondary school portion of this report.

Future Planning - The Council sent the area school superintendents a questionnaire in an effort to gain their opinion on a number of items relating to career and vocational education. Fourteen of the fifteen area school superintendents returned a completed questionnaire for a response of 93 per cent. Item 33 in the questionnaire attempted to identify future

plans by area schools for program change in status. Table 4 lists the responses received by the Council. The reader will observe that only a small number (50 per cent or less in all cases) of the area school superintendents chose to reveal their future plans for program status change. Considering those who responded, only one area school reported that they were planning to discontinue one program which was designed to prepare entry level office workers.

With respect to guidance-type programs designed to orient prospective students to the world of work, it was reported in the survey that there currently are fourteen programs functioning in some of the fourteen responding area schools to provide orientation and/or work exploration in occupational clusters. The majority of area school administrators responding indicated that exploratory areas were available in the following areas: office occupations, agriculture-business, natural resources, and health occupations. A moderate amount of administrators reported offering exploratory areas in marketing and distribution, communication media, health occupations, and manufacturing. Very few indicated exploratory courses are being offered in the following areas: personal service, construction, and transportation. In addition, the Council is aware that six area schools presently provide learning centers that focus on removing academic deficiencies of persons. The basic skills instruction offered in these centers help remove individual deficiencies, so that persons will be able to pass the General Education Development Test and qualify for a high school equivalency certificate. Other types of human services are often available.

COUNCIL QUESTIONNAIRE ITEM #33

33. In the chart below, please indicate: (1) The number of programs you are offering in each of the following areas; (2) The number of new programs you are planning in each of the following areas in the next three years, and (3) The number of programs you plan to discontinue in the next three years.

	Orientation to the World of Work	Work Exploration	Entry Level	Semi-Skilled	Skilled	Technical	Professional
DISTRIBUTIVE ED.					[3] 7	1	3
1. Present Programs							
2. New Programs		1				[3] 6	1
3. Discontinue							
OFFICE EDUCATION					[4]	[5]	
1. Present Programs	4	1	1	1	10	10	3
2. New Programs		[2] 2			2	2	1
3. Discontinue			1				
AGRICULTURE					[3]	[5]	
1. Present Programs	1				6	10	2
2. New Programs		1			[2] 2	[2] 2	1
3. Discontinue							
HOME ECONOMICS					[3]		
1. Present Programs					4		
2. New Programs			1			1	
3. Discontinue							
TRADE AND INDUSTRY					[3]	[7]	[3]
1. Present Programs	5	1		4	18	40	11
2. New Programs			1		2	[3] 6	2
3. Discontinue							
HEALTH					[4]	[7]	[2]
1. Present Programs	2				12	11	5
2. New Programs		1			1	[2] 2	
3. Discontinue							
SERVICE							
1. Present Programs					1	3	1
2. New Programs					[2] 2	[2] 3	
3. Discontinue							
OTHERS (Specify Below)							

Table 4

PROGRAM EXPANSION PLANS PROJECTED BY AREA SCHOOL ADMINISTRATORS

[ ] Number of Schools Responding

Chart by Iowa Career Education Advisory Council

This latter group of schools are beginning to move the focus of their learning centers to include career orientation and exploration. The majority of the fourteen instructional offerings are funded under the special needs portion of Public Law 90-576. While the operation of the centers is designed to first meet the needs of the disadvantaged and handicapped, many of the area schools are also making the facilities and services of these centers available to those without disabilities who need occupational orientation and exploration. Three area schools do not provide a career orientation and exploration, or basic academic skills instruction center.

One area school reported that they planned to begin work exploration programs in office education, while a second area school reported that they would begin an exploration program that would include the occupation groups of distribution, office, agriculture and health. One of the two schools was already offering work exploration in trade and industrial occupations. Council field observations reveal that many secondary students do not have sufficient information about the world of work and, therefore, some fine it difficult to make wise job choices. It would be advantageous for all area schools to make available, to prospective students, a work orientation and exploration program or center to assist those students who are doubtful about future careers in making informed choices. When the career education concept is universally implemented in the elementary and secondary schools in the state, the need for the area school orientation and exploration centers may no longer exist.

Approximately 50 per cent of the area schools reported that, in the next three years, it should be expected that thirty-six new vocational education programs should be started. Included in this number should be nine programs to provide persons with skills to be employed in skilled occupations, twenty-two programs in technical occupations, and five programs in professional occupations. Assuming that the responses of approximately fifty per cent of the schools are a reasonably accurate predictor of efforts of all area schools, it appears that heavy emphasis on future program development will be on the technical fields. The greatest expansion of technical level programs should occur in the occupational categories of distribution and trade and industrial occupations. Lesser numbers of programs will be started in the occupational categories of office and clerical, agriculture, health and service occupations. Reference should be made to Graph 1, Chapter II. This Graph compares projected training output with stated labor market needs found in the State Plan for Career Education. The reader will observe that the greatest output, compared to need, occurs in technical education. Recognition is given to the possibility that State Plan labor market need data may not be valid. If the completion of the labor market needs portion of the CENIS Project reveals that the 1971 State Plan projections were reasonably accurate for technical workers, there may be a need to council with area school administrators about their expansion plans and suggest other alternatives.

Another factor that may be influencing area school administrators toward planning heavier emphasis on technical programs is current population trends in the State and the current State General Aid Formula.

Generally, technical programs are two years duration, while vocational programs trend toward shorter duration, between three and eighteen months.

In June of 1972, Mr. Richard Sydness of the State Auditor's Office met with this Council and explained: By 1986, Iowa will have slightly more than a twenty-six per cent decline in the twelfth grade enrollment. This may have the effect of reducing the public and private post secondary school enrollment. (34)

JUNE 1970 SCHOOL CENSUS (34)

		*
Under One Year	36,840	26.3%
One Year	37,324	25.4%
Two Year	41,429	17.2%
Three Year	43,085	13.9%
Four Year	46,191	7.7%
Five Year	50,054	

* Percentage of population decline of five year old's

The declining population may force area school administrators to extend all educational programs to two year's duration, in order to keep the classroom and laboratories full. Another possibility is for the Arts and Science Program to be extended to three years in the area schools. Some private two year colleges are already doing this.

He further commented that:

> Current reimbursement practices may inhibit the implementation of more effective teaching techniques. The audio-tutorial aided instruction in one case has proved to be more efficient than traditional teaching methods. The area school, in effect, is being penalized because they can collect general aid for each student for only 8 weeks whereas, previously, they were able to collect the general aid for twelve weeks. (34)

It appears that a trend may be appearing on the horizon in which new programs will be established and existing programs adjusted because of population factors, rather than labor market and student needs. Programs may be structured for disproprotionate lengths, compared to the time necessary to impart the technical knowledge and skills, as well as developing the individual's other abilities to function effectively in society.

There is a need to find solutions to problems being created by declining population, area school instructional stations, the general aid formula, and instructional efficiency and relate these to labor market needs and student interest.

Related Academic Instruction - In an effort to expand the base of information needed to evaluate the area schools' effort in meeting the educational needs of the population which they serve, the Council sent questionnaires to the fifteen area schools' vocational-technical instructors representing each of seven instructional fields offered. The Council received 68 per cent or 206 of the 298 questionnaires mailed to the instructors. This was accomplished through two mailings to the representative population. This was considered to be an acceptable response, compared to return results in other survey efforts.

Psychologists suggest that there is a positive relationship between an individual's success and his interest in the subject. Most students enroll in the vocational programs because they have a high level of interest in learning skills and technical knowledge necessary for competence in a particular field. These students are in need of certain related academic instruction to successfully achieve their goal.

Cooperation between the academic and vocational education instructors is needed to orient specific course content to meet individual needs and interest. Approximately 55 per cent of the area school vocational-technical education instructors responding to the survey expressed the view that academic instructors were willing to modify the focus of instructional content to meet individual needs and interests. Nearly all of these instructors indicated they met periodically with the academic instructors for the purpose of coordinating academic instruction with the job training they are providing. Fifty per cent of this group indicated they met at least once a month. Nearly one-half of the instructors reported their school tested individual students for competency in basic skills and then scheduled instructional programs keyed to the students' needs.

The post secondary vocational education instructors were asked to respond to questions related to instruction in the areas of social science and English. Because of the way the questions on social science were constructed, the results are non-conclusive and cannot be reported with any degree of accuracy.

Communications, either written or oral, are a necessity for the success of an individual in his occupational choice. If the individual fails to communicate his ideas or fails to understand the ideas of others, he cannot develop the proficiency needed to accomplish his job well. The majority of the instructors expressed the opinion that the related English instruction develops skills in conference-leading techniques, parliamentary procedure, writing technical reports, effective public speaking, and also developing a technical vocabulary useful for the consumer. Only about

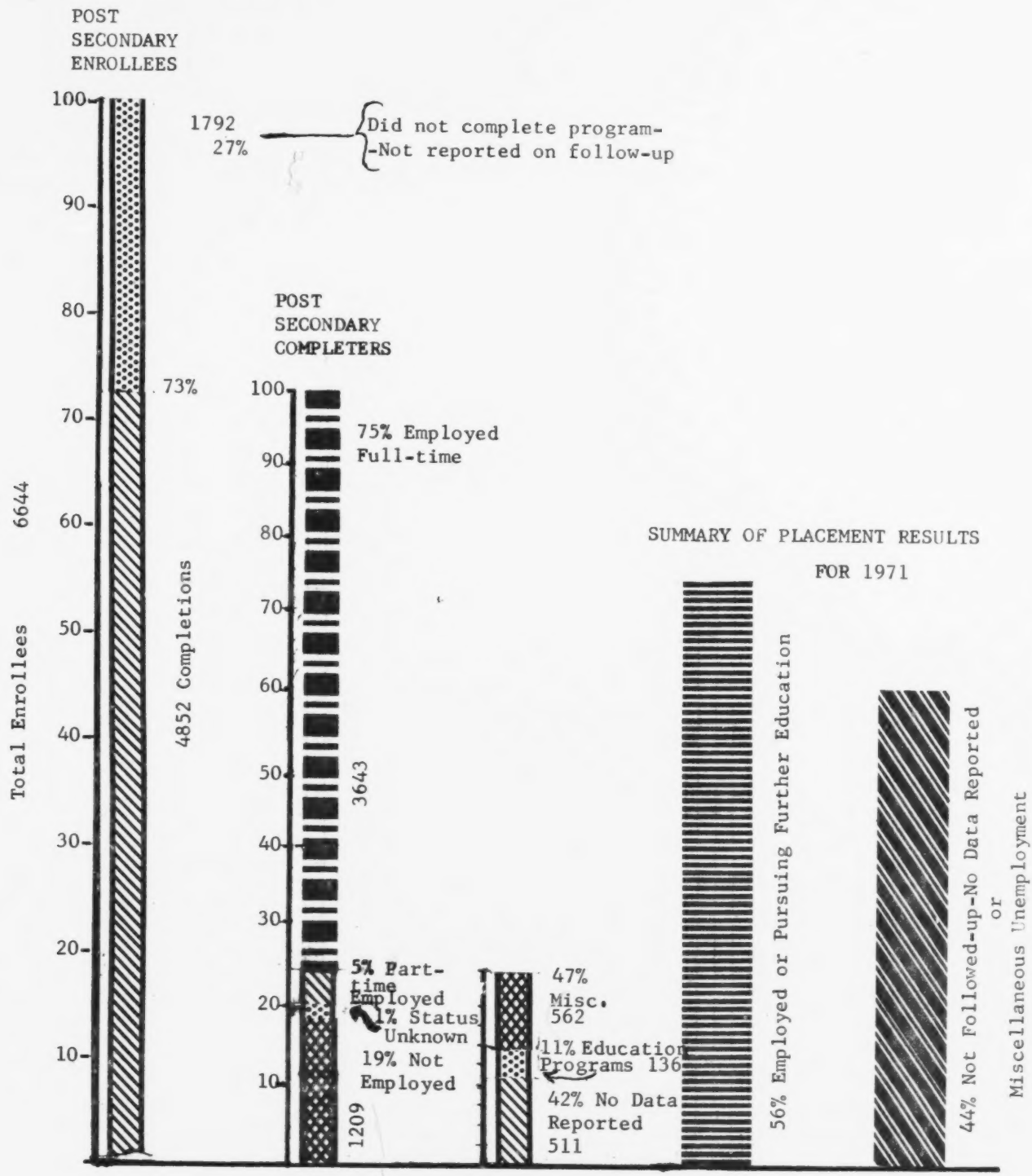
one-third of the instructors were of the opinion that related English instruction provides units of instruction in interpreting mechanical drawings, sketches, schematic diagrams, pictorial drawings, or that skills were developed in analyzing terminology commonly found in legal contracts. The post secondary career education instructors were further questioned concerning instruction in job application and interviewing techniques. Nearly all of those responding reported the English curriculum was providing instruction in these areas. There appears to be a need to continue the encouragement for pragmatizing the related academic instruction offered to vocational and technical students in area schools, in order to fully implement the career education concept in the area schools.

Post Secondary Administrators' Opinion - Career Education Concept - In a short series of true or false questions, the Council attempted to ascertain the exposure of the administrators to the emerging career education concept. Thirty-five per cent of the area school administrators either did not reply or expressed the view that career education is a new name for vocational education. It should be stressed that Council opinion suggests that vocational education is only the job preparation part of the total career education concept. All of the area school administrators responding reported that their Board of Education had been exposed to essential concepts of career education. When asked to express their reaction that clusters of occupational programs ought to be available for students in fifteen major occupational areas in order to meet student needs, most felt it wasn't applicable at the post secondary level, but rather the development should occur in the local elementary and secondary schools.

Program Justification - The area school administrators were also questioned about the source data they used for justifying and establishing new programs in vocational-technical education. Most of the administrators ranked Labor Market Surveys of the local community as being the most important in establishing new programs. Students Statement of Interest was ranked second in their selections, and suggestions from the business community ranked third.

GUIDANCE AND COUNSELING

Placement and Follow-Up of Vocational Education Terminators - The 1971 Career Education Student Follow-Up provided data on post secondary students enrolled in the fifteen area schools offering approved vocational and technical education programs. The post secondary students, enrolled in vocational education programs, had a completion rate of seventy-three per cent. Graph 22 presents an analysis of the post secondary student follow-up, as of October, 1971. The Graph shows that, of those completing vocational education programs, seventy-five per cent are employed full-time, while nineteen per cent are unemployed, five per cent are employed part-time and the status of one per cent of the graduates was unknown. In the summary of placement results for 1971, the last two bars in Graph 2 reveal that, of the 6,644 total enrollees, fifty-six per cent are employed or pursuing further education, while forty-four per cent were either not followed up, no data reported, are experiencing unemployment, or are not working for miscellaneous reasons. It should be noted that directions accompanying the State follow-up reporting form specify "All area school students terminating enrollment in an approved preparatory career education offering during the 1970-71 school year". (should be included in the population to be surveyed). (29) Apparently, there is a reluctance on the part of area schools to follow-up those students who terminated vocational or technical programs without completing the program or there is a reluctance to report the employment status of the non-completers.



GRAPH 22

ANALYSIS OF POST SECONDARY STUDENT FOLLOW-UP, OCT. 1971

Data From 1971 Career Education Follow-up

Chart by Iowa Career Education Advisory Council

Graph 12 , Chapter IV, presents an analysis of the percentage of former students for whom their status is unknown or are not available for placement. Considering those who were enrolled in post secondary programs, the occupational clusters with the greatest percentage of former students in this category were gainful home economics and health occupational education. A third category that ranks high is trade and industrial occupations. The lowest percentage of former students with status unknown or not available for placement occurred in agriculture, distribution, and office occupations. Overall, the area schools have a lower percentage of students with status unknown or not available for placement than secondary schools

In addition to the 1971 State Career Education Student Follow-Up, many of the area schools conduct a more in-depth study to determine the effectiveness of their total program offerings. The Council requested and received copies of the various studies compiled by the area schools in the past year for the 1970-71 school year. A review of these studies showed that, generally, the data reported for vocational-technical graduates is parallel to the data requested in the State Annual Follow-Up of vocational-technical students.

Elsewhere in the study, the Council reports enrollment trends of area schools and community colleges from 1968 to the present. The reader will observe, by reviewing these charts, that the four area vocational-technical schools all experienced increases in enrollment in vocational-technical programs. There were no arts and science students

enrolled in these institutions. With respect to the eleven comprehensive community colleges functioning within the State, three of these institutions experienced significant enrollment increases in vocational-technical programs. One of these three institutions did not assume responsibility for a previously established junior college. The remaining eight area community colleges that assumed administrative responsibility for the operation of one or more previously existing junior colleges report no significant change of enrollment trends when comparing arts and science with vocational education.

The major goals of a comprehensive community college include a commitment to meeting the needs of students. For this reason, the Council reviewed the latest follow-up reports from these institutions to determine whether an effort is being expended toward following up the arts and science students and to determine whether these programs are meeting the needs of students. This review yielded the following information:

- Three institutions did not follow up the 1971 arts and science graduates.
- Five institutions, some time near the end of their two years of schooling, questioned their arts and science students about their future plans.
- One school conducts a follow up of their arts and science students some time after they graduate.
- One school questioned arts and science graduates concerning qualitative measures of instruction in the community college.
- One school did not submit a follow-up report.

It is recognized that some arts and science programs are designed so that a student may qualify for employment upon graduation or

may complete the last two years of education to earn a B. A. Degree. Other students are enrolled in liberal studies which generally impart few employment skills and are designed mostly for transfer purposes.

It appears that follow-up studies, based on intent, may have questionable credibility in terms of providing useable management information for school administrators to use for planning future institutional direction. Data illustrating actual arts and science graduate pursuits after graduation may provide a better basis for counseling future freshmen entering the arts and science programs, and might assist school administrators in keying educational program direction to real student needs, rather than assumed student needs or intentioned plans. Information about actual arts and science graduate pursuits could also assist in measuring the effectiveness of "terminal type" arts and science programs. There appears to be a need to improve the follow-up efforts of all post secondary area school students, both qualitatively and quantitatively.

Alternative Methods for Student Follow-Up - The State of Minnesota has implemented a centralized state-wide student follow-up system to determine the status of those who have terminated from vocational-technical programs. The data is collected directly from the student and the student's employer.

Four different types of follow-up reports have been developed from the data:

1) A summary of data on all students followed up across the entire state.

2) A summary of data on students followed up in each curriculum area (e.g., auto mechanics) across the the entire state.

3) A summary of data on all students follow up within each school.

4) A summary of data on students followed up within each curriculum area within each school.

The employers are also surveyed to evaluate the graduates by comparing them with other members of their work force.

The Vocational Follow-Up Project is conducted by a highly specialized staff which is responsive to the needs of the vocational-technical schools and the State Department in Minnesota. This approach tends to provide an efficient vehicle for gathering such follow-up information. The Iowa system seems to be more cumbersome by requiring each of the schools to follow up its own students. Efficiency is increased not only in terms of the economics of being able to finance a central unit more inexpensively than it is possible when taking time from guidance and instruction personnel in each area school, but also in terms of being able to gather comparable data from each of the schools. (55) In a phone conversation with Dr. David Pucel, Project Director of Minnesota's Vocational Follow-Up Project, he stated that student follow-up costs averaged approximately $5.00 per student after the initial systems development. (47) This Project was financed by state allocations of research funds from the federal government.

FINANCIAL A'IALYSES

Information Source

In an effort to sample the vocational education financial needs of the area schools, the Council sent questionnaires to 298 area school instructors, in the fifteen merged area schools. The questionnaires were sent to all the area schools, so as to compensate for regional differences that may exist in the state and provide a clearer picture of the total needs of the area schools. In order to identify future financial needs, the instructors were questioned about their opinions on teaching equipment and supply needs. The career education programs surveyed were: office education, trade and industrial, health occupations; distributive education and home economics. Through a mechanical error, the vocational agriculture instructors at the post secondary level were not sent questionnaires; however, instructors from other fields providing "support" instruction for agriculture programs were surveyed.

Equipment and Supplies

The need for equipment varies with the type of program offered, for example, distributive programs usually place heavier practical experience emphasis through use of the cooperative method of teaching which requires less equipment. The length of the program also tends to have an effect on the amount of equipment needed.

The responses to the questionnaire relating to equipment will be discussed by program, rather than collectively, to provide a clear indication of the typical individual program need included in this survey sample.

Home Economics - Six of the thirteen post secondary home economics instructors responded to the questionaire. The number of responses is so small that the results cannot be considered to be significant.

Office Education - Forty-eight reimbursed post secondary office education instructors were included in the sample of the Council survey. Thirty-five of this number returned questionnaires for a response of nearly seventy-five per cent. The majority of those returning questionnaires, seventy-five per cent, utilized both the laboratory and cooperative method for instructing their students. Forty per cent of this group was of the opinion that their equipment was modern and up-to-date and that no replacements were needed in the near future. A larger percentage of the total group responding, fifty-seven per cent, expressed the view that, while their equipment is presently adequate for instructional purposes, in a short time it will become obsolete and should be replaced.

Approximately fifty-five per cent of the office education coordinators who responded have expended the effort necessary to identify the number of dollars that will be needed to up-date their equipment in the future. The vast majority that did respond estimated that their future up-dating needs would cost the local school district $10,000 or less. Fourteen per cent of the respondents reported that the replacement cost for worn out or obsolete equipment would be $10,000 to $50,000. The instructors reported that their administration would be able to expend sufficient funds to buy replacement or additional equipment if state or federal funds were available to reimburse at least fifty per cent of the cost of the equipment.

Nearly sixty per cent of the responding instructors had presented to their administration, in recent years, a written "Status of Major Equipment Report" for planning and budgeting purposes. Nearly 85 per cent had visited verbally with their administration about the equipment and supply needs, while only twenty-eight per cent had developed a five or ten year replacement or acquisition of new equipment plan to satisfy the laboratory instructional needs.

The office education instructors were further questioned concerning the extent to which existing laboratory equipment was used during the day for instructional purposes. More than two-thirds of the instructors reported that the equipment was used six hours during the normal school day, and more than two-thirds reported that their laboratories were used for adult education programs each year.

In any laboratory situation, it is impractical to expect that all equipment and work stations were used all of the time, because some instructional equipment is used in support of other equipment for teaching purposes and, therefore, become a part-time training station. Almost fifty per cent of the instructors reported that between five and ten per cent of their training stations were vacant during the instructional periods. Slightly more than twenty-five per cent reported that between ten and fifteen per cent of their training stations were vacant during instructional periods. Only five instructors (twelve per cent) reported that more than twenty-five per cent of their training stations were vacant each instructional period.

Distributive Education - Nineteen post secondary distributive education instructors were included in the sample of the Council survey. Fifteen of this number returned questionnaires for a response of seventy-nine per cent. Nearly seventy-five per cent of the responding instructors utilized the laboratory and cooperative method for instructing their students. Forty per cent of this group was of the opinion that their equipment was modern and up-to-date and that no replacements were needed in the near future. A smaller percentage (thirty-three per cent) expressed the view that, while their equipment is presently adequate for instructional purposes, in a short time it will become obsolete and should be replaced. Forty per cent of the distributive education instructors who responded have expended the effort necessary to identify the number of dollars that will be needed to up-date their equipment in the future. Because the number of responses is small, the results cannot be considered reliable. However, all of those that responded estimated their future up-dating needs would cost the area school $10,000 or less. Nearly half of the instructors reported that their administration would be able to expend sufficient funds to buy replacements or additional equipment if state or federal funds were available to reimburse at least fifty per cent of the cost of equipment.

Approximately forty per cent of the instructors had presented to the administration, in recent years, a "Status of Major Equipment Report" for planning and budgeting purposes. Approximately ninety per cent had visited verbally with their administration about equipment and

supply needs, while only thirteen per cent had developed a five or ten year replacement or acquisition of new equipment plan to satisfy the laboratory instructional needs.

The distributive education instructors were further questioned concerning the extent to which existing laboratory equipment was used during the day for instructional purposes. Fifty-five per cent utilized their equipment three hours during the normal day, while nearly thirteen per cent reported using their equipment six hours during the day. Only a small per cent (thirteen per cent) reported that their laboratories were used for adult education programs each year.

In an effort to determine the utilization of work stations during each period, nearly thirty-five per cent reported that only five to ten per cent of their training stations were vacant during the periods. Only two instructors (6.6 per cent) reported vacant stations fifteen to twenty-five per cent of the time, while thirteen per cent reported that more than twenty-five per cent of their training stations were empty each instructional period.

Health Occupations - Fifty-nine reimbursed post secondary health occupation instructors were included in the sample of the Council survey. Forty-five of this number returned questionnaires for a response of seventy-six per cent. Eleven per cent of this instructors used the laboratory method of instruction, while seventy-six per cent utilized the laboratory and cooperative method. Thirty-two per cent of this group were of the opinion that their equipment was modern and up-to-date and that no replacements were needed in the near future. Nearly one-half

expressed the view that, while their equipment was adequate for instructional purposes, in a short time it would be obsolete and should be replaced. Ten per cent felt their equipment was out-of-date, but in good repair. Approximately forty-six per cent of the health occupation instructors who responded have expended the effort necessary to identify the number of dollars that will be needed to up-date their equipment in the future. Nearly fifteen per cent estimated that their replacement need would cost the area school district $2,000 or less. Thirty-one per cent estimated the cost at between $2,000 and $10,000. Five respondents reported that the replacement cost for obsolete or worn out equipment would be $10,000 to $50,000. Nearly one-half of the instructors reported that their administration would be able to expend sufficient funds to buy replacement or additional equipment if state or federal funds were available to reimburse at least fifty per cent of the cost of equipment.

Two-thirds of the instructors had presented to the administration, in recent years, a written "Status of Major Equipment Report" for planning and budgeting purposes. While seventy-six per cent reported they had visited verbally with their administration about equipment and supply needs, only twenty-six per cent had developed a five or ten year replacement or acquisition plan to satisfy the laboratory instructional equipment needs.

The health occupations instructors were questioned concerning the extent to which existing laboratory equipment was used during the

day for instructional purposes. Nearly fifty per cent of the instructors reported that their equipment was used six hours during the normal school day, and forty-eight per cent reported that their laboratories were used for adult education programs each year. Thirty-five per cent of the instructors reported that less than ten per cent of their work stations were empty each instructional period. Approximately seven per cent reported that between ten to fifteen per cent of their training stations were vacant during instructional periods. Thirty-two per cent of the instructors reported that less than fifteen per cent of their training stations were empty each instructional period.

Trade and Industries - One hundred and fifty-nine reimbursed post secondary trades and industries coordinators or instructors were included in the sample of the Council survey. One hundred and five of this number returned questionnaires for a response of sixty-five per cent. Trades and industries programs include both cooperative or preparatory types of instruction. The cooperative method of instruction in trades and industries at the post secondary level includes the use of laboratory and classroom instruction, followed by sequences of on-the-job training offered throughout the program or, in some cases, during the summer recess only. The preparatory type of program is used almost exclusively at the post secondary level of instruction. The majority of these instructors (sixty-seven per cent of 105 respondents) utilized the laboratory method for instructing their students, while twenty-five per cent utilized the laboratory and cooperative method. The largest percentage

of this group expressed the view that, while their equipment is presently adequate for instructional purposes, in a short time it will be obsolete and should be replaced. The next largest group was of the opinion that their equipment was modern and up-to-date for the present programs and no replacements were needed. A smaller percentage felt their equipment was out-of-date and needed replaced. Sixty-three per cent of the trade and industrial instructors responded that they had expended the effort necessary to identify the number of dollars that will be needed to up-date their equipment in the future. Twenty-four per cent reported that their future needs would require from $10,000 to $50,000 for the purchase of new or replacement equipment. Another thirty-two per cent estimated replacement costs at $10,000 or less. Sixty-six per cent of the instructors reported that their administration would be able to expend sufficient funds to buy replacement or additional equipment if state or federal funds were available to reimburse at least fifty per cent of the cost of the equipment.

Approximately sixty per cent of the instructors had presented to the administration, in recent years, a written "Status of Major Equipment Report" for planning and budgeting purposes. More than eighty-five per cent had communicated verbally with their administration about equipment and supply needs, while only twenty per cent had developed a five or ten year replacement or acquisition of new equipment plan to satisfy the laboratory instructional needs.

The trade and industry instructors were further questioned concerning the extent to which existing laboratory equipment was used during the day for instructional pusposes. Sixty-two per cent of the instructors reported that the equipment was used six hours of the normal school day and sixty-five per cent reported that their laboratories were used for adult education programs each year. Forty per cent of the trades and industries instructors responded that between five per cent and ten per cent of their work stations were vacant during the daily instructional period. Twenty-three per cent reported that between fifteen and twenty-five per cent were vacant during the period. Six programs reported more than twenty-five per cent of their training stations were empty each daily instructional period.

The trade and industry instructors have indicated a definite future need for the replacement of equipment and expansion of new program offerings.

Summary

This unit of the annual report was probed to assist state and area school administrators in viewing financing problems that may appear on the horizon.

The amjority of area school vocational instructors included in this survey reported that their teaching equipment was modern and up-to-date. The group that reported they had the most up-to-date instructional laboratories were the office education instructors, while the

programs with the least up-to-date equipment was in health occupations.

The majority of instructors who reported the need to replace obsolete or worn out equipment stated that less than $10,000 would be required for up-dating. A very high percentage of the instructors who reported equipment needs also reported that their administration would be able to purchase the necessary new equipment if fifty per cent of the cost would be reimbursed from state and federal funds.

The instructors were questioned about the action they had taken to appraise their local administrator of the equipment needs. Instructors in three of the four service areas reported that more than fifty per cent had developed a written "Status of Major Equipment Report" that had been filed with their administrators. Over eighty per cent of the instructors had spoken to their administrator about their needs which implies that thirty per cent of the population that didn't prepare a written report did take the time to speak to their administrators about their needs. More than twenty per cent of the instructors surveyed had developed a replacement plan which could be used by their administration, so that needed replacement equipment could be purchased in an orderly manner over several years.

All service areas reported a high level of usage of their laboratory facilities with few vacant training stations. There also appears to be extensive use of post secondary facilities for adult education programs.

During the June, 1972 Council meeting Mr. Richard Sydness of the State Aduitor's Office discussed financial factors relating to area school operations. According to audited figures, the value of the fixed assets of the fifteen area schools amounts to $55,131,526.00. (34) The fixed assets of area schools include the value of buildings, equipment, and furniture. The estimated value of the equipment and furniture in all fifteen area schools is $15,000,000.00. (48) It has been suggested that legislation be drafted to provide for area schools to set aside funds equal to the annual depreciation of the equipment to allow for reserves to purchase new equipment when existing equipment becomes obsolete or inoperative. (34)

Appropriations and Allocations

Vocational Aid Funding Trends - The reader should refer to Graph 4, Chapter II, for a comparison of area school vocational allocations to total state and federal allocations for vocational and technical education. This Graph also compares the post secondary allocations to secondary school allocations. It is of interest to note that the total post secondary allocations have increased approximately thirty-three and three tenths per cent from fiscal year 1968 through fiscal year 1972. The per cent increase is due, apparently, to increased federal allocations, since state allocations for vocational-technical education have not increased as greatly in the five year period. While the approximate one-third increase in allocations for area schools, for vocational programs,

over a five year period may appear to be sizable, the increase amounts to approximately six and seven tenths per cent annually which is nearly equivalent to the nation-wide inflation rate over the same period.

Graph 22 illustrates the various appropriations made for all vocational education by the State Legislature for six years. One particularly interesting point should be highlighted. Biannually, area school general aid has been increased from $12,000,000 in 1967-69 to $25,970,000 in 1971-73, for an increase of approximately 108 per cent. During the same period, total state vocational appropriations have increased from $12,000,000 to $13,800,000 for a mere increase of fifteen per cent during the three bienniums. There appears to be a need to review legislative interest in placing greater emphasis on the expansion of vocational and technical programs in area schools.

Also to be considered is the fact that area schools have continued to increase their vocational-technical program offering during the past five years. Should the State Legislature continue to fund vocational and technical programs in accord with its recent past performance, will there be sufficient programs available to meet the needs of the numbers of student who are now expressing increasing interest in preparing for work in a vocational-technical program, rather than pursuing a B.A. Degree?

General Aid Funding Trends - Table 5 summarizes the financial appropriations by the State Legislature for general aid appropriations for the six years from fiscal year 1968 through fiscal year 1973. With respect to these appropriations for undergraduate post secondary education during

TABLE 5

STATE BIENNIAL ALLOCATIONS for UNDERGRADUATE POST SECONDARY EDUCATION in IOWA

(Exclusive of Allocations for State Administration)

	1967-69 Biennium	1969-71 Biennium	1971-73 Biennium
A. General Instructional Aid (Undergraduate)			
1. Area Schools	$12,000,000 (62-SF873 (p.66)*	$19,400,000 (63-HF825(p.251)	$25,970,000 (64-HF741 (p.53)
2. Board of Regents	$119,240,000 (62-SF838 (p.38)	$135,860,000 (63-SF655 (p.51)	$154,675,000 (64-HF724 (p.73)
TOTAL	$131,240,000	$155,260,000	$180,645,000
B. Student Aids (Undergraduate) tuition grants, scholarships, student loans, (including private schools, area schools, & universities)	$325,000 (62-HF765 (p.67)	$525,000 (63-SF636 (p.56)	$525,000 (64-SF528 (p.71)
	$2,000,000 (62-SF837 (p.69)	$4,500,000 (63-SF688 (p.56)	$8,000,000 (64-HF724 (p.73)
TOTAL	$2,325,000	$5,025,000	$8,525,000
C. Construction			
1. Area Schools	$9,500,000 (62-SF879 (p.67)	NONE	$434,167 (64-SF179 (p.85)
2. Board of Regents	$34,000,000 (62-HF747 (p.42)	$7,100,000 (63-SF689 (p.54)	$146,750 (64-SF588 (p.76)
		$150,000 (63-SF696 (p.55)	$3,151,000 (64-SF586 (p.76)
			$1,000,000 (64-SF587 (p.77)
			$969,000 (64-SF584 (p.75)
TOTAL	$43,500,000	$7,250,000	$5,700,917

* 62-SF873 (p.66) [62 = session laws from 62nd General Assembly. SF873 = Senate File 873. (p.66) = page in session laws.]

TABLE 5 (Continued)

D. Catagorical Vocational Aids			
1. Administrative Allocation[1]	$6,714,414	Data Not Available[2] for Calculation	
2. Legislative Allocation	($12,000,000)[3] (62-SF876 (p.64)	($13,200,000)[3] (63-SF622 (p.42)	$10,350,000 (64-HF709 (p.56)
(Manpower Development Training Act)	$350,000 (62-SF867 (p.61)	$400,000 (63-SF622 (p.42)	$360,000 (64-HF692 (p.55)
	$7,064,414		$200,000 (64-HF744 (p.60)
TOTAL			$10,910,000

[1] From annual reports to U.S. Office of Education for FY 1968 & 1969, Form 4043. This amount does not reflect allocations to special catogories such as handicapped and disadvantaged, et. al.

[2] Annual report to the U.S. Office of Education for 1969-70

[3] Appropriations made leaving DPI the discretion of allocating funds between secondary and post secondary area schools. See Administrative Allocation

GRAPH 23

STATE BIENNIAL ALLOCATIONS
for
UNDERGRADUATE POST SECONDARY EDUCATION
in IOWA

Graph by Iowa Career Education Advisory Council

the 1967-69 biennium, the regents institutions received $119,240,000, compared to $12,000,000 for area schools or approximately one per cent of the total going to area schools. During the 1971-73 biennium, the regents institutions received $154,675,000, while the area schools received $25,970,000 for approximately eighty-five per cent of the general aid going to the regents institutions.

Appropriations for construction have been greater to the Board of Regents institutions than to area schools, however, not to the extent as has the general aid appropriations.

Programatic Costs

Introduction - Section 286A.12 of the Iowa Code provides for the establishment of a uniform accounting system for area schools. The law states that:

> "The superintendent of public instruction shall establish a uniform accounting system for area schools subject to the approval of the auditor of state. The accounting system shall provide for crediting all funds received in the form of federal aid, state, aid, tuition, and miscellaneous fees to four separate accounts as follows:
>
> 1. Arts and science education
> 2. Vocational-technical education
> 3. General adult education
> 4. Co-operative programs or services
>
> All expenditures shall be charged to the appropriate account. No funds shall be transferred from one account to another without the approval of the superintendent of public instruction, and notification of all such transfers shall be given to the state comptroller. The accounting system of each area school shall be audited annually by the auditor of state." (63GA.ch 190, 4[2]) (9-22)

It should be noted that each area board of education was given the latitude to spend its 3/4 mill local tax levy for any purpose.

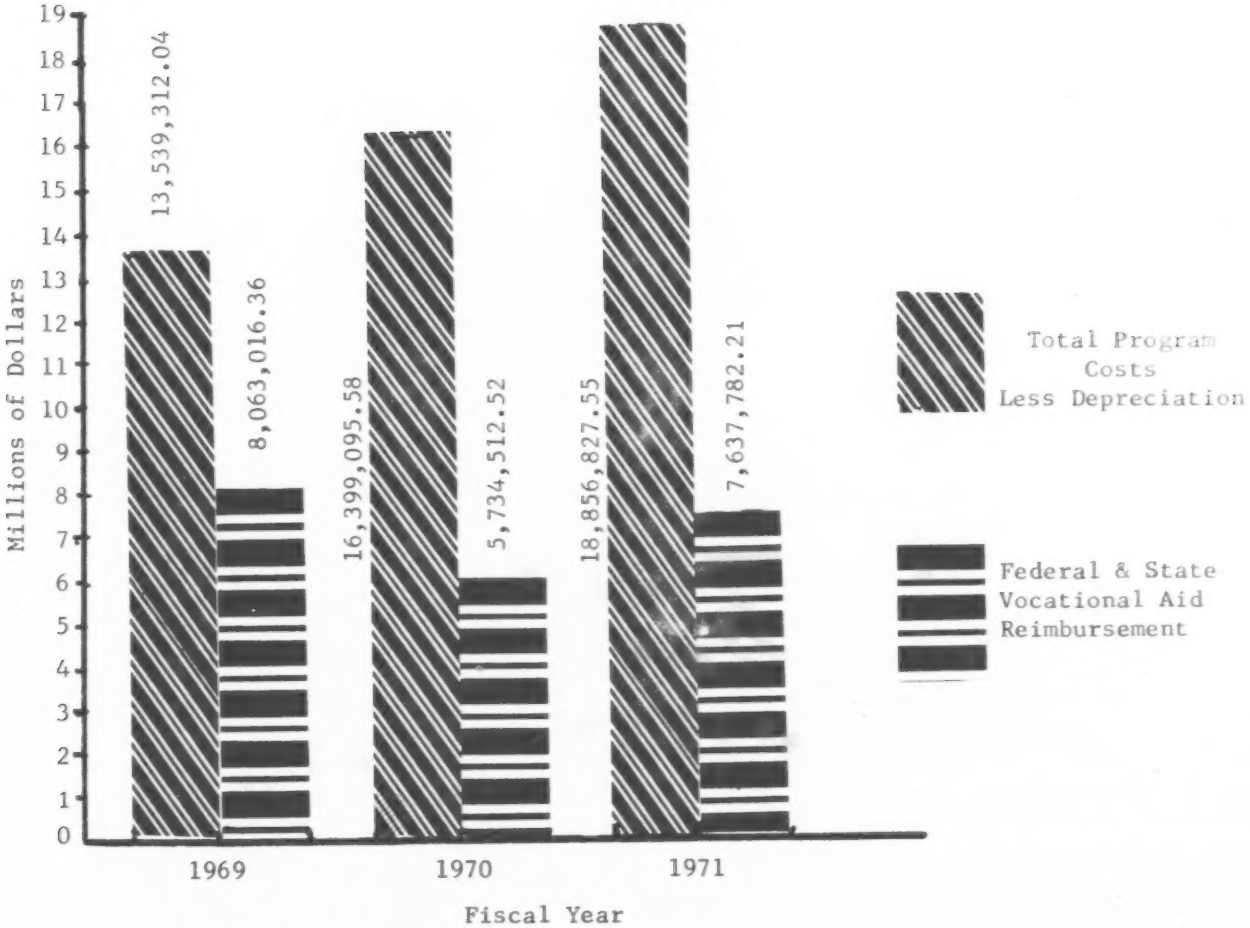
The State Auditor's Office, working cooperatively with the Department of public Instruction and the business managers of some area schools, in an advisory capacity, developed procedures for accounting for program costs in accord with the Iowa Code. They established that direct program costs include such items as instructional salaries, equipment and supply costs, directly attributable to the program, and functional administrative costs and building costs prorated to the program and based on the square footage of space used in the program. Indirect program costs are also included in the calculation of total program cost. These indirect costs include the cost of general administration, student services, learning resource centers and organized research. The cost of attributable salaries, building, furniture and the like are included in the total of indirect costs. The prorating of these indirect costs is made according to the total contact hours of instruction currently offered in each of the four educational functions listed in the law.

During recent years, the State Board of Public Instruction has been approving additional programs, based on recommendations of its staff, as funded or unfunded programs. The area school administrators submit budgets for each vocational-technical program to the Department of Public Instruction covering their estimated financial needs for each fiscal year. These needs are expressed in terms of total program cost and the portion

of expected reimbursement from state and federal vocational aid funds. First priority is given to allocating vocational aid funds on a proportion basis to existing operational vocational technical programs. If all of the vocational aid funds are committed to existing programs, then the area schools are allowed to operate new programs, however, these new programs are not allocated any state or federal vocational aid funds. The area schools must locate other sources of funds in their budget to support any new programs. One of the other sources includes the local 3/4 mill tax levy. The area board may use these funds to totally support new vocational programs. Another source of funds are past year "left-overs" from existing operating vocational and technical programs. If the estimated budget for a program was greater than the actual cost of the program, the excess amount may be directed to funding the new vocational program(s). A third source of funds that area schools might use for funding new vocational programs are funds carried over from the previous fiscal years. Currently, the Iowa Code is silent as to how area schools shall use carry-over funds. Therefore, funds left over from arts and science programs might be used to establish new vocational-technical programs or vice versa.

Funding Levels - Graph 24 shows, from State Auditor's Reports, the amount of state and federal vocational aid funds used to reimburse vocational-technical programs on a state-wide basis, compared to audited total cost of programs for three fiscal years, from 1969 through 1971. Possibly, Graph 25 presents more meaningful information by showing the

GRAPH 24

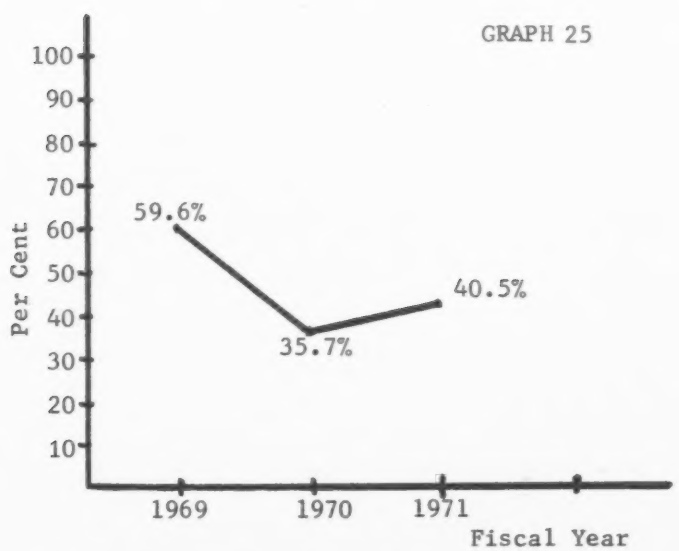


State-wide Post Secondary Voc. - Tech. Program Total Costs Compared to Post Secondary Vocational Aid Reimbursement

(Data from State Auditor, Area Schools Consolidated Reports, and State Auditor's Office)

Graph by Career Education Advisory Council

GRAPH 25



Per Cent of Reimbursement Compared to Total Program Cost Post Secondary Voc. - Tech. Programs

Graph by Career Education Advisory Council

percentage of state and federal vocational aid used to support the total cost of programs in area schools. During fiscal year 1969, area schools received 59.6 per cent of the audited total cost of programs needed to support all of their vocational-technical programs from state and federal vocational aid. In fiscal year 1970, this amount was reduced to thirty-five per cent, while in fiscal year 1971, this amount increased to 40.5 per cent. It is important to note that fiscal year 1970 was the first year in which area schools were required by Section 286A.12 to charge all income and expenditures to the appropriate accounts for the four educational functions described in Section 286A.12 of the Iowa Code. Although the State Auditor's Office had attempted to identify a proper allocation of income and expenditures from available data for previous years, this portion of the Code prohibited the transfer of funds from one educational function to another, unless approved by the Superintendent of Public Instruction, after fiscal year 1969.

An analysis of the 1971 Auditor of State's consolidated report (Schedule 3) reveals that, on a state-wide basis, the area schools expended the following amounts from their three-quarter mill local tax levy and miscellaneous receipts, including carry-overs from previous years on:

Arts and Sciences	$2,500,301.98	
Vocational-Technical	2,945,117.98	
Adult Education	392,300.39	(35)

It should be further pointed out that all of the area schools in the State showed a total of $5,705,451.25 undistributed balance at the end of fiscal year 1971. The balances for individual area schools ranged from $152,677.00 to $1,019,030.84. The majority of the balances ranged from $200,000.00 to $380,000.00. (35) It appears that the reserves of the vast majority of the area schools are becoming dangerously low. It also appears that development of new vocational-technical programs in area schools will only be accomplished through the appropriation of additional state funds earmarked for vocational-technical education, additional funds made available under authority of Public Law 92-318, and/or the discontinuance of some less effective programs and the diversion of funds from these programs to new programs.

Program Cost Variations (34) - During fiscal year 1971, the cost per full-time equivalent enrollment for area school students ranged between $952.00 and $1,876.00 for the school year with the cost for all but two of the schools ranging between $1,288.00 and $1,616.00. For comparative purposes, the cost of instruction for the freshman year at the University of Iowa is estimated at $1,500.00, while the cost of instruction at Iowa's private colleges for each year of the four years ranges between $2,400.00 and $3,400.00. Further comparison reveals that the full-time equivalent enrollment annual average cost for area school students enrolled in arts and science programs is approximately $1,047.00, while the average cost for vocational-technical students is $1,472.00. Considering

that, generally, expensive equipment required for vocational-technical programs compared to the lack of need for such equipment for university freshman students in arts and science, it appears that area schools are functioning quite efficiently.

Currently, there is wide variance in cost of like programs between area schools. For instance, the cost range for ten drafting programs runs from $1.36 to $3.10 per instructional hour, per student, while the cost range in clerical-business office programs offered by ten area schools ranges between $1.22 to $4.82 per student, per instructional hour. The cost variation is due to the length of the program, the number of students enrolled, the amount of equipment available and the like. Currently, no system is available to measure the effectiveness of the program, as reported by former students and employers. Until more detailed follow-up data is available, there is no basis to determine whether the expending of $4.82 per student, per instruction hour, yields a student better prepared for competitive employment. When comparable data is available, it will also be necessary to determine whether lower cost, per instructional hour, will provide sufficient instruction, so that the individual will be able to compete effectively in entry level employment and have sufficient motivation to continue his education on a commuter basis in private or public colleges and universities or community colleges if he sees the need for furthering his education. The reader should refer to the Guidance, Follow-Up and Placement portion of this report for further information on current efforts

to follow up students.

There is a need to identify qualitative instructional factors and relate these factors to instructional per hour costs, so that the most efficient cost-quality ratio can be assured.

CHAPTER 5

SUMMARY AND CONCLUSIONS

- The 1972 State Plan for Career Education, in places, is vague. This quality diminishes its value as a true planning document. Forthcoming labor market information may be of value in clarifying future State Plans.

- Secondary school students are expressing greater interest in pursuing post secondary vocational-technical programs in area schools. This may bewhy projected arts and science enrollments in area schools generally did not materialize.

- Future vocational and technical program planning should be enhanced by annual labor market needs surveys. Results of these surveys will provide for more definitive data to be contained in the State Plan for Career Education.

- Student attitudes and opinion, according to one congressional leader, reflect greater youth interest in vocational-technical programs and a need for more of this type of education with less emphasis on arts and science programs.

- Area Community Colleges that assumed responsibility for one or more junior colleges were not able to aggressively implement vocational and technical programs during the early years of the area school movement in Iowa. Now that these institutions are able to implement vocational-technical programs, state and federal vocational education funds have been committed elsewhere.

- There is an imbalance of training effort in Iowa in the seven occupational clusters identified in the State Plan for Career Education, when compared to employment opportunities projected in that document.
- Some area schools provide their clientele an occupational orientation and/or exploration center for those in need of assistance for making career choices.
- Population trends and the state general aid formula may be forcing area school administrators to extend vocational and technical program lengths to disproportionate lengths, in order to keep their schools financially solvent.
- Council survey results reveal that selected academic instruction in the majority of area schools is related to the world of work, however, lesser numbers of communication skills instructors devote any time to skill building in interpreting technical illustrations and developing an understanding of common legal terminology.
- The 1971 vocational-technical student follow-up efforts and the resultant reports do not reflect the reasons for almost forty-five per cent of the post secondary vocational-technical enrollees experiencing some form of unemployment or not reporting their status.
- Current efforts at following-up of both vocational-technical and arts and science students enrolled in area schools lack sufficient detail to yield useful management information.
- The post secondary vocational and technical instructors, sampled by a Council survey, report that generally their instructional equipment is in serviceable condition, however, in the not-to-distant future, an extensive replacement program may need to be implemented.

- State appropriations and allocations for post secondary vocational-technical programs are less than general aid appropriations for undergraduate study at the regents institutions and less than the general aid appropriations for area schools. General aid increases for area schools have been far greater than those for vocational-technical education.
- Area schools, state wide, are spending slightly more of their local 3/4 mill tax levy on vocational technical programs than on arts and science programs.
- Costs of like types of programs among area schools vary greatly.

POST SECONDARY RECOMMENDATIONS

The Council recommends that:

1. Future State Plans for post secondary programs should delineate greater detail, identifying job categories for which new programs will be implemented.

2. Primary emphasis should be given for the use of forthcoming funds to broadening the vocational-technical program offering in area schools with limited offerings. Secondary emphasis should be given to expansion of program offering in schools already possessing a broad offering.

3. Opportunities for residents of the State to attend any area school in the State be continued.

4. Area schools that have voids in their program offerings in the fields of distribution, home economics, health occupations, and agriculture should implement programs in these occupational fields, keyed to labor market needs, to provide programs for students who have talents and interests in these fields of employment training.

5. Area Schools should provide structured occupational exploration opportunities for those students who are doubtful about career opportunities.

6. Area schools excercise caution in implementing technical level and home economics programs to be reasonably sure employment opportunities will exist for program graduates.

7. A study be implemented to identify methods by which the problems relating to declining population and greater youth interest in vocational-technical education be resolved.

8. Instruction in communication skills in the area schools be related to the student's course of vocational instruction and should be adjusted to include interpretation of technical illustrations and basic legal terminology.

9. Follow-up efforts be vastly improved for both vocational-technical students and arts and science students, and that consideration be given to the establishment of a centralized agency to assume responsibility for this work.

10. Legislative action be taken to provide for area schools to accumulate funds based on the depreciation rates of capital equipment.

11. An assessment of area school vocational-technical programs be keyed to achieve the most efficient cost-quality ratio.

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APPENDIX

Appendix A

INVENTORY OF COUNCIL FIELD VISITS

July, 1970 through June 1971

September 28 & 29, 1970 — Mason City - Schools visited.

Mason City Community
Charles City Community
Clear Lake Community
North Iowa Area Community College
Conducted Public Hearing

November 17, 1970 — Council Bluffs - School visited.

Council Bluffs Community
Lewis Central Community
Iowa Western Community College
Conducted Public Hearing

May 25, 1971 — Decorah - Schools visited.

Decorah Community
South Winneshiek - Calmar
Howard-Winneshiek Community - Cresco
Northeast Iowa Area Voc. Tech. School
Conducted Public Hearing

June 25, 1971 — Estherville - Schools visited.

Emmetsburg Community
Estherville Community
Iowa Lakes Community College
Blue Earth Minnesota Central
Vocational Facility
Conducted Public Hearing

July 1971 through June 1972

November 18, 1971 — Ottumwa - Schools visited.

Ottumwa Community
Davis County Community - Bloomfield
Eddyville Community
Iowa Tech Community College
Conducted Public Hearing

May 18, 1972 — Sioux City - Schools visited.

Sioux City Community
LaMars Community
Western Iowa Tech
Conducted Public Hearing